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ABSTRACT

This publication is part of a series that reprints articles on a range of thematic issues published in the "Canadian Journal of Higher Education." This collection focuses on community colleges in Canada. Although the community college sector has been evolving in Canada for almost 40 years, community colleges have received only limited attention in the literature on higher education. As community colleges in Canada enter a new era, it will be more important to share information about their development and operation. After a preface and an introduction, the five articles are: (1) "A Study of Students from Academic Programs in British Columbia's Community Colleges" (John D. Dennison, Glen Forrester, and Gordon Jones, 1982); (2) "Goals of Community Colleges in Canada: A 1987 Perspective" (John D. Dennison and John S. Levin, 1988); (3) "Freshman Attrition in a College of Applied Arts and Technology in Ontario" (Peter H. J. Dietsche, 1990); (4) "Innovation and Entrepreneurship in Colleges: An Interpretive Study of the Piloting of Innovation Centres" (Carol L. McWilliam, 1990); and (5) "Arrangements for Coordination between University and College Sectors in Canadian Provinces" (Michael L. Skolnik and Glen A. Jones, 1993). (Individual article contains references.) (SLD)

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CHERD/CSSHE READER SERIES
Number 1

COMMUNITY COLLEGES IN CANADA

CHERD/CSSHE Reader Series

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COMMUNITY COLLEGES IN CANADA

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CHERD/CSSHE
READER SERIES

CHERD/CSSHE READER SERIES
Number 1

COMMUNITY COLLEGES IN CANADA

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The University of Manitoba

1996

COMMUNITY COLLEGES IN CANADA

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Preface

The *CHERD/CSSHE Readers Series* represents a collaborative partnership of the Centre for Higher Education Research and Development and the Canadian Society for the Study of Higher Education. The series is intended to bring together the best articles that have been published in the *Canadian Journal of Higher Education*, in a range of thematic issues. It is hoped that the collection will provide a useful basis for the systematic examination of those issues, on the part of both researchers and practitioners; and that they will stimulate further investigation in those critically important areas of scholarship and practice.

Alexander D. Gregor

General Editor

Introduction

Although the community college sector has been evolving in Canada for almost 40 years, these institutions have received only limited attention in the literature on higher education. The paucity of articles on this topic in the *Canadian Journal of Higher Educatior* is testimony to this observation. Canada's colleges continue to play a prominent role in the provision of educational opportunity and in many provinces attract a student population which exceeds that in the university sector. As organizations, colleges present a rich source of study for scholars interested in phenomena such as accessibility, instructional methodology, curricular innovation and relationships between education, training, and work. They also provide an intriguing case study for scholars of sociology, economics, educational technology, history or organizational behaviour.

Given their potential as a subject for investigation, it is useful to speculate on the reasons why community colleges have so rarely been the subject of scholarly writing. In essence, colleges are teaching institutions. Faculty are expected to devote their professional lives to a considerable number of hours of instruction in classroom, laboratory or shop settings. Their second task is to work with individual students in various locations. And while college instructors may be encouraged to participate in community activities, they are neither required, nor in most cases rewarded, for engaging in research or scholarly writing. In consequence, very few college teachers publish in their discipline, and even more rarely do they select the community college, its structure, mission or performance, as a subject for investigation.

Another explanation for their low profile in the literature on postsecondary education lies in the colleges lack of a clear identity, particularly from a national perspective. Unlike universities, which tend to conform to a common set of values and characteristics in this country, community colleges embody very different mandates, organizational forms, and curricula designs among its various provincial systems. Consequently, it is difficult to generalize about many aspects of the community college idea without constant reference to the diversity which exists across Canada.

In the twenty-five years of its existence *The Canadian Journal of Higher Education* has published only twenty-one articles devoted specifically to a issue from the community college sector and, of these, sixteen articles focused upon the college system in either British Columbia or Ontario. For reasons outlined earlier, most of the writing has been the work of university scholars, rather than college practitioners. (A notable exception is John Levin who, after an extensive career as a college teacher and administrator, continued his research interest on the college concept in a new role as a university professor in the field of higher education.)

Although limited in number, articles in *The Canadian Journal of Higher Education* concerned with the community college cover a wide range of issues. From a national perspective, Levin and Dennison (1988, 1989) address the broad interprovincial diversity

within the college sector by exploring the goals of college education and the variety of pressures which confronted provincial systems during the nineteen-eighties. Few issues are as diverse as the ways in which the university and college sectors in each province coordinate their activities. Skolnik and Jones drew attention to the design and implications of various arrangements in their analysis published in 1993.

Issues associated with college development and relations with government, albeit limited, are the subject of analysis by Barrington (1982) in reference to Alberta, while Dennison (1971, 1979), and Levin (1994), centre upon British Columbia. Given the importance placed upon access and student achievement, it is perhaps surprising that only four publications refer to this topic. In the sole article prepared in Quebec, Denis (1975) examined the social characteristics of students in the early years of the CEGEP. Dennison *et al.* (1982) documented the paths followed by students from academic programs in British Columbia, while Devlin and Gallagher (1982) analyzed the different needs of college age and adult students in the same province. Dietsche (1990) explored the critical question of student attention in one Ontario college.

On the broad topic of organizational behaviour, particularly in the matter of management and governance, Levin (1991, 1992, 1995) examined a number of aspects of presidential leadership. Faculty and staff development were the subject of studies by Konrad (1973) in Western Canada, and by Jones and Gies (1995) and Desroches (1978) in Ontario. Finally, topics as diverse as faculty consulting and entrepreneurship were reviewed by Bell and Jones (1992) and McWilliam (1990), respectively.

After reviewing the modest record of publications relating to the community college in *The Canadian Journal of Higher Education,* there are a number of observations which can be made. While the *Journal* is not the only forum in Canada for scholarly debate on issues of higher education, it is the only publication which preserves a national focus with an academic emphasis and, as such, maintains certain priorities. High on the list are articles with a theoretical or research-based focus. Issues relevant to the college sector are usually more pragmatic, practice-centred, and provincially oriented. Most reports, policy analysis or evaluation studies on the college sector are in government publications and housed in ministerial libraries. Few would meet the criteria for acceptance by *The Canadian Journal of Higher Education.*

Notwithstanding the above it is important to reemphasize a previous comment. There are numerous issues central to the college mission which lend themselves to scholarly analysis and study. As fiscal pressures upon colleges increase, strategies to address problems related to student retention, instructional technology, curricular reorganization, and program delivery call for systematic assessment. Policy issues concerned with government initiatives at federal, provincial and local levels are in dire need of scholarly analysis. There is little doubt that community colleges in Canada are entering a new era in which their long standing dependence on broad government subsidy is ending and alternative forms of financial support must be explored. Students, required to pay more of

their instructional costs, will expect and demand more innovative ways of course and program delivery. Advanced credentials, designed to meet graduate and employer needs, will be structured to recognize prior learning and relevant work experience. As student profiles increase in diversity, with a growing number of entrants from multi-cultural, aboriginal and less abled communities, challenges to the management, teaching and student service components of the colleges will become more intense and more complex. Proposals for more effective governance models, designed specifically to meet community college environments, rather than adopted from other organizations, will be much in demand.

If these issues are to be addressed in a satisfactory manner they will require the efforts of researchers and scholars with a deep understanding and a high commitment to the college idea. Hopefully, such individuals can be found within the college community itself and many will choose *The Canadian Journal of Higher Education* as the appropriate forum for sharing their ideas.

John D Dennison

The University of British Columbia

Articles on Community Colleges from the *Canadian Journal of Higher Education*

- **College-University Relationships**

Dennison, John D. *University transfer program in the community college.* VIII:2 (1978), pp 27-38.

Skolnik, Michael L., & Jones, Glen A. *Arrangements for coordination between university and college sectors in Canadian provinces.* XXIII:1 (1993), pp 56-73.

- **History and development**

Dennison, John D. *The community college in comparative and historical perspective: The development of the college concept in British Columbia.* IX:3 (1979), pp 31-40.

Dennison, John D. *The colleges of British Columbia: Some basic issues.* I:1 (1971), pp 27-33.

- **Organization and governance**

Barrington, Gail Vallance. *Do community college presidents and government officials share the same perspective?* XII:1 (1982), 43-55.

Dennison, John D., & Levin, John S. *Goals of community colleges in Canada: A 1987 perspective.* XVIII:1 (1988), pp 49-63.

Levin, John S. *Change and Influence in the Community Colleges of British Columbia.* XXIV:1 (1994), pp 72-87.

Levin, John S. *The paradox of the presidency: The difference a president makes in institutional functioning at three community colleges.* XXII:3 (1992), pp 28-45.

Levin, John S. *The importance of board-president relationship in three community colleges.* XXI:1 (1991), pp 37-53.

Levin, John S., & Dennison, John D. *Responsiveness and renewal in Canada's community colleges: A study of organizations.* XIX:2 (1989), pp 41-57.

Levin, John S. *Success Community College: An examination of organizational change.* XXV:1 (1995), pp 19-39.

• Programs

McWilliam, Carol L. *Innovation and entrepreneurship in colleges: An interpretive study of the piloting of innovation centres.* XX:3 (1990), pp 85-102.

• Staff

Bell, Stephen, & Jones, Glen A. *Paid consulting in Ontario Colleges of Applied Arts and Technology.* XXII:3 (1992), pp 1-13.

Desroches, Jocelyn. *Authority conflict in relation to the job satisfaction of Ontario CAAT's instructors.* VIII:1 (1978), pp 33-45.

Jones, Glen A., & Geis, George L. *Faculty development structures and activities in Ontario's Colleges of Applied Arts and Technology.* XXV:1 (1995), pp 41-61.

Konrad, Abram G. *Staff development in western Canadian colleges.* III:1 (1973), pp 47-52.

• Students

Denis, Ann B. *Some social characteristics of CEGEP graduates.* V:2 (1975), pp 39-56.

Dennison, John D., Forrester, Glen C., & Jones, Gordon. *Degree completion at British Columbia's universities.* XII:2 (1982), pp 43-57.

Dennison, John D., Forrester, Glen, & Jones, Gordon. *A study of students from academic programs in British Columbia's community colleges.* XII:1 (1982), pp 29-41.

Devlin, Laurence E., & Gallagher, Paul. *Age-related needs of community college students.* XII:2 (1982), pp 33-42.

Dietsche, Peter H.J. *Freshman attrition in a College of Applied Arts and Technology of Ontario.* XX:3 (1990), pp 65-84.

A Study of Students from Academic Programs in British Columbia's Community Colleges

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Abstract

One of the major features of British Columbia's community colleges has been the university transfer programs which provide the opportunity for students to earn credits towards a university degree. Previous studies have shown, however, that only a small percentage of students from these programs actually transfer to a university. This study was designed to examine the behaviour of those students who complete academic or university transfer courses in a college, but do not continue their study in a university. Data were gathered from approximately 4,000 students from 14 colleges in the 1979-80 calendar year. The results of the study indicate that students pursue academic credit courses primarily for personal development rather than for university transfer. The community colleges provide an intellectual and cultural environment, particularly for mature students who for geographic, educational or socioeconomic reasons would not have been able to continue their education beyond secondary school. The study provided an important insight into the changing role of the community college. Originally designed as an institution for college age students to begin university level study, it has become a multi-purpose educational resource for a wide segment of society.

Résumé

Une des principales caractéristiques des collèges communautaires de la Colombie Britannique a été d'offrir à ses étudiants la possibilité de prendre des crédits transférables au niveau universitaire. Des études antérieures ont démontré que seulement un faible pourcentage d'étudiants utilisent cette possibilité et transfèrent à l'université. Cette étude avait pour but d'examiner le comportement des étudiants qui, de fait, se prévalent de la

possibilité de prendre des crédits transférables mais qui ne continuent pas leurs études à l'université. Les résultats d'une étude qui fut menée en 1979-80 avec la participation de 14 collèges et 4,000 étudiants indiquent que ces étudiants sont d'abord intéressés à parfaire leur développement personnel plutôt qu'à s'inscrire à l'université. Les collèges communautaires procurent un environnement intellectuel et culturel pour les étudiants adultes en particulier qui, pour des raisons de niveau de scolarité, localisation géographique et milieu socio-éconoinique, n'auraient pu continuer leurs études au-delà du secondaire. Cette étude démontre que le rôle des collèges communautaires a changé: conçus initialement pour les étudiants d'âge collégial afin de leur permettre de commencer leurs études universitaires, les collèges communitaires sont maintenant devenus une ressource utilisée par un large segment de la société pour des fins variées.

Introduction

In 1965, the first community college in British Columbia, Vancouver City College, commenced operation under the aegis of the Vancouver School Board. In the ensuing fifteen years, fifteen colleges have been established throughout the province. Six are located in the densely populated areas of the Lower Mainland and southern Vancouver Island, while the remaining nine are spread over the interior and northern regions of the province. Largely modelled upon the multipurpose two-year institutions in the United States, British Columbia colleges have embraced a comprehensive curriculum, reflected in a variety of programs including university transfer, career/technical, vocational, remedial and upgrading, and community education.

While the colleges have undergone a process of evolutionary change, the university transfer or liberal studies programs have retained a high public profile and are one of the most attractive features, particularly for students who, for a variety of reasons, are unable to enroll in the universities. All three public universities in the province are located in the Lower Mainland - Southern Vancouver Island region. In October 1978, the community colleges in British Columbia enrolled a total of 55,000 students in credit courses of which 18,700 were undertaking academic or "university transfer" programs.

Given the original requirements of the colleges to establish academic credibility, a great deal of effort was made to monitor the performance of students who had transferred from the colleges, with advanced credit, to the universities (Forrester, Jones & Dennison, 1981). However, it became evident that the proportion of students actually transferring to the universities was quite small, although there has been considerable conjecture as to the percentage which met this category.

In any event, many observers have expressed concern about the effectiveness of university transfer programs in colleges. Reactions range from those who feel that the small number of transfers represents a failure on behalf of the colleges, to others who insist that the figures indicate that the colleges are performing a worthwhile task in helping students to make realistic decisions with regard to their academic futures. However, there is a body

of opinion which insists that the notion of "university transfer" is really a misnomer, in that many students have no intention of moving to university and are undertaking academic courses for a variety of other reasons.

In view of the debate concerning the university transfer programs and the importance placed upon them, it seemed appropriate to undertake an empirical study in the form of a "follow-up" of those students who, after enrolling in academic programs, did not transfer to university. The foregoing concerns prompted this research project.

Study Objectives

The objectives of the study could be classified under two categories:

1. To determine the transfer rates to university of students in academic programs, by college, after a period of one calendar year.

2. After identifying those students from the original population not enrolled within the British Columbia educational system after one year, to gather information from them which would provide data on the following questions:

   (a) What was their original objective for enrolling at a college?

   (b) To what extent had their original objective been attained?

   (c) What was the major program of study at college?

   (d) What expectations did these students hold for a college education?

   (e) If, and for what reason, the student withdrew from the college?

   (f) For what reason did the student not continue his education at a university?

   (g) What was the student's current activity (either in work or study)?

   (h) Would the student re-enroll in college and under which conditions?

   (i) Did the student leave the geographic area of the college to find employment?

   (j) To what extent did the college education help in obtaining a job?

   (k) What was the student's general assessment of his college experience?

Students were also invited to comment on any unspecified topic in an open section on the questionnaire.

Methodology

The procedure followed in the project was finalized after a series of meetings with representatives of the Colleges, the Ministry of Education and the Academic Council, the latter being a provincial committee of educational professionals and the lay public created to coordinate academic programs within the college system. The population base for the study was defined as all students enrolled on either a part or full-time basis, in both first and second years of the academic or "university transfer" programs in all fourteen community colleges in British Columbia as of September, 1978.

The September 1979 enrolment files of all colleges, universities and the British Columbia Institute of Technology in the province were matched by student names and birthdates with the original population base to determine which students had transferred to other institutions during the intervening twelve month period, and which students were still enrolled in their original colleges. This procedure provided data on transfer rates which were based upon the follow-up of individual students, rather than through the more usual and less accurate technique of comparing gross enrolments.

From the original base population of 17,181 students, 2,168 were identified as having transferred to one of the universities, 290 had transferred to another college or to the British Columbia Institute of Technology. In addition, 3,897 students were still enrolled in their original institutions. The remaining 10,883 students were regarded as "educational status undetermined" or, by the definition of the study, "non-transfers". These students had not been found among the September 1979 enrolment files in British Columbia and became the "target" population for the remainder of the project.

The procedure then involved contacting these non-transfer students by means of a questionnaire, designed to meet the objectives of the study. Mailings were done in February 1980, approximately nine months after most of the students would have last attended their college. The students were classified by college originally attended and were all mailed a questionnaire, in the case of the small colleges, or sampled by a stratified formula, in the five larger colleges. In total, the sample selected from the target population comprised 7,997 students (represented a 70% sample of the target population). By the final date for return of the questionnaires a total of 3,923 responses had been received. The actual rate of usable returns was 49%. However, 935 mailings were reported by the Post Office as undeliverable. Adjusting for these undeliverable mailings raises the return rate to 56%, a figure more indicative of the degree of participation and cooperation received from former students. On a college-by-college basis the response rates ranged from 40% to 65%. A total of 871 respondents completed the section of the questionnaire which invited open-ended comments and reactions. These comments were studied, classified and incorporated into the results and conclusions of the study.

After the response forms had been key-punched, a broad statistical analysis of the data was conducted. In each case, significant statistical differences were noted and the results processed to record such differences. A comparison of the respondent population with the

target population was made on the basis of age and sex. The Chi square tests revealed some statistical bias in terms of females and adult students, both categories having responded more frequently than males and college age students. A large number of multivariate tables were produced, based upon observations drawn from previous studies.

Results

Transfer Rates

Table 1 summarizes the September 1979 enrolment status of students from the September 1978 base population. The transfer rates to British Columbia universities, by college, range from 5.6% to 17.1%. The adjusted transfer rates, calculated by eliminating the students still enrolled at their original college, are indicated in parentheses.

Adjusted transfer rates, to British Columbia universities, by college, range from 6.4% to 21.4%. With respect to the terms of the study, the percentage of the "nontransfer" or target population students ranges 56% at Capilano to 82% at Northwest College.

Before drawing conclusions from the data in this table the consequences of the following important caveats should be noted.

Enrolment status in September 1979, as defined in the study, includes only those students enrolled in academic programs in selected public tertiary institutions in British Columbia. It would not include students continuing their education in the five specialised technical institutes of the province other than the British Columbia Institute of Technology, in private institutions or in career/technical or vocational programs of the community colleges. Generally, it will also not include students continuing their education outside the province, with the exception of those enrolled in universities who managed to receive the follow-up questionnaire and chose to respond. Corrections for this latter group were made as noted in footnote "b" of the table. Consequently, transfer rates listed in this table should be viewed as under-estimates.

The time frame of the data was only one calendar year, September 1978 to September 1979. Presumably, many students may enroll or re-enroll in various educational institutions after spending undetermined periods of time in other activities.

The "non-transfer" population includes students who have withdrawn from their programs at various times during tile year as well as students who may have completed one or more semesters of study at the college.

It may be argued that many students enrolled in a college in September 1978 would not be *eligible* for transfer to a university in September 1979, particularly if they were part-time students. There is no way of addressing this possibility, however, some students could conceivably transfer after only one course at college, depending upon their academic status.

Table 1

Enrolment Status as of September 1979 of College Students Enrolled on the Academic Program in September 1978

College[a]		Enrolled September 1978	Enrolment Status as of September 1979: Still Enrolled Original College	Attending university: UBC	SFU	UVic	Unspecified[b]	Sub-Total	BCIT	Other Colleges	Total Transfers	Multiple Enrolment	Non-Transfers
Camosun[d]	N	1,298	162	18	10	96	61	185	2	9	196	11	951
	%		12.5	1.4	0.8	7.3	4.7	14.3 (16.3)[c]	0.2	0.7	15.1 (17.3)[c]	0.8	73.3 (83.7)[c]
Capilano[d]	N	1,621	421	85	95	9	68	257	13	20	290	6	916
	%		26.0	5.2	5.9	0.6	4.2	15.9 (21.4)	0.8	1.2	17.9 (24.2)	0.4	56.5 (76.3)
Cariboo	N	1,008	230	47	16	21	27	111	6	8	125	2	655
	%		22.8	4.7	1.6	2.1	2.7	11.0 (14.3)	0.6	0.8	12.4 (16.1)	0.2	65.0 (84.2)
Douglas[d]	N	3,940	1,028	179	161	10	53	403	29	41	473	12	2,451
	%		26.1	4.5	4.1	0.3	1.3	10.2 (13.8)	0.7	1.0	12.0 (16.2)	0.3	62.2 (84.2)
Malaspina	N	1,285	315	34	9	68	29	140	1	6	147	6	829
	%		24.5	2.6	0.7	5.3	2.3	10.9 (14.4)	0.1	0.5	11.4 (15.2)	0.5	64.5 (85.5)
New	N	842	224	33	14	9	32	88	1	5	64	1	525
Caledonia	%		26.6	3.9	1.7	1.1	3.8	10.5 (14.2)	0.1	1.0	11.5 (15.7)	0.5	62.4 (85.0)
Okanagan	N	1,110	112	49	23	41	77	190	11	15	216	1	783
	%		10.1	4.4	2.1	3.7	6.9	17.1 (19.0)	1.0	1.4	19.5 (21.6)	0.1	70.5 (78.5)
Selkirk	N	601	80	26	7	19	47	99	2	6	107	1	415
	%		13.3	4.3	1.2	3.2	7.8	16.5 (19.0)	0.3	1.0	17.8 (20.5)	0.2	69.1 (79.7)
Vancouver[d]	N	3,643	919	309	118	20	78	525	48	34	607	5	2,122
	%		25.2	8.5	3.2	0.5	2.1	14.4 (19.3)	1.3	0.9	16.7 (22.3)	0.1	58.2 (77.9)
Fraser	N	955	292	24	30	60	45	105	5	13	123	8	548
Valley	%		30.6	2.5	3.1	0.6	4.7	11.0 (15.8)	0.5	1.3	12.9 (18.6)	0.8	57.4 (82.7)

Table 1 (continued)

College[a]		Enrolled September 1978	Still Enrolled Original College	Attending university					BCIT	Other Colleges	Total Transfers	Multiple Enrolment	Non-Transfers
				UBC	SFU	UVic	Unspecified[b]	Sub-Total					
				Enrolment Status as of September 1979									
Northwest	N	410	49	2	5	6	10	23	0	4	27	1	335
	%		12.0	0.5	1.2	1.5	2.4	5.6 (6.4)	0.0	1.0	6.6 (7.5)	0.2	81.7 (92.8)
East Kootenay	N	191	35	3	0	2	11	16	0	2	18	0	138
	%		18.3	1.6	0.0	1.0	5.8	8.4 (10.3)	0.0	1.0	9.4 (11.5)	0.0	72.3 (88.5)
North Island	N	--	--	--	--	--	--	--	--	--	--	--	--
	%		--	--	--	--	--	-- --	--	--	-- --	--	-- --
Northern Lights	N	277	30	0	3	6	17	26	0	6	32	0	215
	%		10.8	0.0	1.1	2.2	6.1	9.4 (10.5)	0.0	2.2	11.6 (13.0)	0.0	77.6 (87.0)
Total	**N**	**17,181**	**3,897**	**809**	**491**	**313**	**555**	**2,168**	**118**	**172**	**2,458**	**57**	**10,883**
	%		**22.7**	**4.7**	**2.9**	**1.8**	**3.2**	**12.6 (16.3)[c]**	**0.7**	**1.0**	**14.6 (18.5)[c]**	**0.3**	**63.3 (81.9)[c]**

[a] North Island College did not participate in the study and is therefore not included in the totals.

[b] Estimate derived from students responding to the follow-up survey who indicated that they were currently enrolled at a university. The specific university was not identified and may well be outside the province in many cases. Since these figures reflect only those students responding to the questionnaire, they should be viewed as an underestimate.

[c] Figures in parenthesis are adjusted rates, calculated by eliminating those students who were still enrolled at their original college.

[d] Colleges located in close proximity to a public university.

Questionnaire Results from "Non-Transfer" Students

The majority (62%) of students in academic programs enroll on a part-time basis (Educational Data Services, 1979, p. 27). In the last ten years this proportion has doubled (Dennison, 1978, pp. 27-28). Questionnaire results from the "nontransfer students" indicated an identical 62% part-time enrolment status. Two thirds of the female students were part-time, while only half of the males were enrolled in that category. It was also found that over 83% of the mature students and 38% of the college age group were part-time. In other words, the results showed a high relationship between age, sex and part-time study.

Thirty-four percent of the "non-transfer" students reported transfer to university as their original reason for enrolling in college. Twenty-five percent gave their prime reason as "personal enrichment" and smaller percentages chose "learning new skills" and "undertaking a career". In the case of mature students, only one in five indicated that they intended to transfer to a university.

Social sciences and humanities proved to be the most popular areas of study, particularly for mature students. Further analysis showed that the goal of "personal enrichment" was related to the choice of fine arts, languages and humanities as fields of study at college. Students who indicated that their original objective was university transfer were more frequently enrolled in the sciences.

Prominent factors in the choice of a community college over other institutions included proximity to students' homes (68%), low cost (50%), programs available (43%), and the fact that the "college was there" (32%). Educational factors such as teaching reputation (14%) and intellectual environment (9%), were apparently less important in making the choice.

The reasons for not transferring to university are varied and complex. Personal factors such as "never intended to transfer" (20%), and certain negative views of universities were more frequent than more practical difficulties as cost (12%), grades (3%), or inadequate prerequisites (6%).

The data indicate that almost two thirds of the students were working full or part-time. In fact, the proportion of involuntary unemployed students was less than 6%. The majority of jobs held by the ex-students were in the "white collar" or semi-professional categories. A number of students from several colleges move from their home communities to find jobs. Not unexpectedly, this behavior was more evident from students in more isolated regions in the province, where up to 25% relocated.

Apparently a college education was not an important factor in obtaining a job. Only about 17% of the students claimed that their employers expressed a specific interest in their college performance. As the education taken by these students was academic, rather than vocationally oriented, the foregoing observation about employers might have been anticipated. Although the subjects in this study had enrolled in non-vocational programs of study at college there were several indications that the practical issue of employment

was prominent in their minds. When asked to indicate their views of the most important objectives of post-secondary education, the single greatest percentage chose "knowledge and techniques applicable to a vocation or field of special interest" (54%), over more intellectual objectives such as "critical thinking" (16%).

Furthermore, asked to express the factors which would influence their decision to re-enroll in college, a substantial percentage (18%) stated "potential benefit to employment". In fact, over one third of the respondent group would choose a career, technical or vocational program on re-enrolment at college.

One question asked respondents to react to certain traditional goals of a college education and to indicate whether the goals had been attained. In terms of goals, students placed greatest value upon obtaining a general education and in preparing for a career. However, while many respondents claimed a high success rate in obtaining a general education (50%), less than one third indicated that they were prepared for a new career.

Finally, in assessing various state the fact that colleges provided increased students were strongly supportive of opportunity for study, were readily accessible in academic, financial and geographical terms, and offered reasonably sized classes with a "positive" mix of students (age, background). However, they were less convinced that the quality of teaching was high, that colleges were concerned about student needs and in the quality of counselling services.

Written Comments from "Non-Transfer" Students

The large number of voluntary responses to the "comments invited" section of the questionnaire suggested that many students were anxious to express some personal reactions and appreciated the opportunity provided. This view was supported in the comments. In summary, about 60% of the comments would be regarded as complimentary to the colleges, about 30% critical and the remainder ambivalent.

The subjects of the comments concerned teaching, counselling and "standards." Expectations in these areas were apparently quite high and students reacted strongly to their experiences. Frustrations were expressed with regard to finances, day-care facilities, inconvenient course scheduling, lack of facilities to continue their education beyond college and the problems associated with "moving to the coast."

The most intriguing aspects of the comments were to be found in the characteristics of the responding population. It seemed that colleges had touched the lives of students from every conceivable socioeconomic group, occupational area, age, aspiration and reasons for attending college.

Implications and Conclusions

The data produced by the study are open to several interpretations, depending upon one's understanding of the role and function of the community college in the broad spectrum of

postsecondary education. While it is difficult to completely eliminate speculation, there is sufficient evidence from this research to indicate that the following comments have validity, and, as such, deserve the attention of the college community.

Transfer Rates

With regard to transfer rates, which reflect the flow of students through the postsecondary educational system, any conclusions must be drawn in the light of the caveats noted earlier in the paper. Although the college transfer rate to university, on a provincial basis, was approximately 16%, this must be assumed to be a conservative figure. It is important to remember that this rate represents the behavior of students in *only one calendar year.* Further, the range of transfer rates among colleges was considerable. Clearly, some colleges in the province are more "transfer oriented" than others. These include the "established" interior institutions and the large lower mainland colleges. On the other hand, the "new" colleges, most of which are located in relatively isolated communities, seem to serve students with different priorities.

Whether one regards the relatively low provincial rate of transfer by colleges to universities as acceptable or not must rest ultimately with one's philosophy towards community colleges. To some, the figures indicate that the colleges are performing an important task in helping students select realistic goals. To others, the same statistic suggests more serious implications, not the least of which is financial.

The College Academic Programs

The study reinforced a fairly common hypothesis, which has been advanced on previous occasions in the literature, that the notion of "university transfer", as applied to the academic programs in the community colleges, is largely a misnomer. Evidently, students pursue academic credit courses more for their potential value and possible future use than for immediate transfer to other institutions. Not only did many students express the view that transfer to university was not their primary goal, but several comments reflected the difficult conditions under which they pursued their education, clearly making transfer to university a most improbable circumstance.

Comments from students indicated a variety of socioeconomic factors, family circumstances and geographic isolation which affected students' educational mobility. It was evident that in many cases the college experience had had a significant impact upon their lives. To other students, however, the colleges for one reason or another had proven to be a disappointment or an unrealized opportunity. Even for many students who had made a successful re-entry into the learning environment, the college was effectively a terminal educational experience. Students in rural areas in particular found that degree completion at a university was an unrealistic or impractical goal.

The study gave credence to the view that colleges provide academic courses and programs for large numbers of students for almost as many reasons as there are students. In

this respect, the colleges' long-standing commitment to the academic component of the curriculum is both defensible and desirable. The comments and responses to the questionnaire items might well be interpreted as being in contradiction to those who view colleges essentially as institutions for the provision of vocational and technical training. It is obvious that, to many, the college is a source of intellectual stimulation which is locally available and hence represents an alternative to the virtually inaccessible university.

There has been considerable reference in the discussion of results to the apparent anomaly connected with the notion of "university transfer" courses, in view of the stated intention of a large percentage of the students who enroll in them. Presumably, if many students take these courses for personal enrichment, the features of university transfer courses such as examinations, grades and formalized instruction would be of little concern. It was suggested in the students' comments that colleges might recognize the problem by being less concerned with the "transfer credit" factors and more with general education. At the same time, it is recognized that experience in this regard has been of little value. Colleges have had limited success, in the past, with "general" academic courses which do not carry university transfer credit. For some reason, students have shown little interest in these courses. Comments on the questionnaires which were directed at "standards" were supportive of raising, rather than relaxing, the quality of the courses. Apparently, students expect and desire high standards.

Given all of the foregoing, colleges are faced with a considerable dilemma in how to approach academic courses for a most heterogeneous student clientele. The concerns of the universities must be recognized, as must student expectations and faculty expertise. It seems that the only satisfactory answer lies with continued negotiation at the individual academic discipline level. Experience in the United States (MacLaren, 1978), indicates an evolving autonomy for the colleges while, at the same time, retaining the confidence of the universities.

One apparent contradiction which emerged in the results was that which existed between students' stated views of the objectives of enrolling in postsecondary education and the type of program in which they actually enrolled. While the majority indicated that vocationally related knowledge was of primary value, these students were enrolled in academic programs. There are a number of possible explanations for this phenomenon. Presumably, jobs are of concern in the long term for most students, whether they attend college or university. However, a general academic curriculum is considered complementary, rather than contradictory, to this objective. In this context, student behaviour is understandable.

There is some indication that several students had enrolled in career or vocational programs after their initial venture into academic education. Others might well have not been able to enroll in the program of their choice immediately and had taken the academic program while waiting for the opportunity to eventuate. Either way, the most appropriate conclusion to draw is that, irrespective of students' intentions with regard to a vocation, an academic program of study remains an attractive experience, particularly under the conditions provided through community colleges.

The College Students

Another often repeated assumption supported by these results was that an increasing percentage of mature, part-time and female students were enrolling in community colleges. It was possible to compare some of the demographic data with similar statistics available in the literature (Educational Data Services, 1979, p. 74). Since 1972, the increase in proportion of part-time students has been impressive. As there is a predictive relationship between part-time study with age and sex, the proportion of the last two variables increased correspondingly. While these results are not surprising, they do dramatize the evolving character of the college student population and suggest a need for colleges to adjust their priorities accordingly.

A further relationship deserving comment is that which exists between demographic variables and reasons for attending college. Personal enrichment is a prime goal of older students and colleges might bear this fact in mind in timetabling and course planning. In periods of financial constraint, institutions tend to limit the number of courses in less traditional time slots. This practice ignores the realities of the changing student population. However, if the trend of the past few years continues, and there seems to be no reason why it should not, colleges will have to make even greater adjustments to accommodate the changing student clientele. These adjustments may include more non-traditional course scheduling and decentralized facilities.

One statistic regarding the accomplishment of students' original objectives in attending college is worthy of particular note. Of those students who indicated their intention as being either one or two years of preparation for university transfer, approximately a quarter noted that they had changed their original goal for one which was more "appropriate". A similar percentage was found in those who stated that they came to college to determine their vocational interest. In both cases, it may be concluded that the college has played a role in helping students make decisions regarding their academic or vocational futures. While this particular function of the colleges has been documented by Clark (1960), there has been limited evidence of its success. For the colleges in British Columbia, at least, there is now some indication of their role in this regard.

To some extent, the study results contradict a minority view that college students, particularly those in academic programs, are perpetual students who are not, or never intend to be, gainfully employed. While the follow-up mailing was approximately nine months after the students' last enrolment in the college, the employment rate was quite high. Only 6% were job seeking and 2% were "unemployed," figures which were somewhat below provincial rates. While it is true that some respondents were still full or part-time students, the overall record of employment is impressive. It might be concluded that those who seek education after compulsory schooling are also those who contribute to the workforce. In one sense, it could be argued that much of the cost of their education is borne through the taxes generated from their own earnings.

With respect to the kinds of jobs held by former college students "white collar" occupations such as clerical, professional, sales, and managerial predominate. While it is tempting to conclude that former students hold such positions because of their college education (although there are certain contradictions to this argument provided in other data), this conclusion must be reserved. It may well be that the same variables, motivation, intellectual curiosity and energy, contribute both to an individual's determination to attend college and his ability to hold certain positions in the work force.

The College Concept

When the community college concept was being developed in British Columbia, the rationale for their establishment was based upon a number of essential criteria. Included in the latter were low cost, location within commuting distance in their region, reasonably open admission policy, comprehensive curricula and quality teaching and counselling. The data gathered in this study tend to reinforce the conclusion that colleges have been successful in meeting many of the original criteria. Certainly, cost and geographic accessibility were primary incentives for enrolment in the greater proportion of their clientele in academic programs. However, the teaching reputation of the college and the perception of an intellectual environment attracted a smaller percentage of students. This view was reinforced by the comments which were offered on the questionnaire. Teaching and counselling met with mixed assessments by former students. While there were many who expressed considerable admiration for these two features, there were several critical comments.

It follows that colleges should spend more time and make greater efforts to ensure quality teaching and counselling. Institutions established with high priority upon these aspects of their operation cannot afford to allow indifferent or mediocre performances by their faculty. Judging from the responses to the questionnaire, students react strongly to unsatisfactory experiences with teachers and counsellors. This conclusion underlines the vulnerability of the faculty and dramatizes the challenges of college teaching.

The data gathered in the study does support the view that there exists a reasonably large number of students who, often for geographic reasons, are unable to complete a university degree and are somewhat frustrated after a successful college experience. The wide dispersal of these individuals through the province suggests the potential value of opportunities available through distance learning techniques.

There was some evidence in the data to support the view that involvement in post-secondary education is positively related to the existence of a college in the region. Previous studies (Angus, 1979; Dennison, 1978; & Dennison et al., 1975), have indicated that participation rates are higher in such areas. In this study, the responses to the category "college was there", as an option in reporting important factors in the choice of a college, were in excess of 30%. In addition, students from "non-commuting" colleges, i.e. beyond range of a university, responded at a rate of almost 50% to this option. While the term "college was there!" may be regarded as non-specific, it undoubtedly summarized the rea-

son for college attendance by a large number of students. While open to several interpretations, the data does tend to support the relationship noted above.

A Final Comment

The data gathered in this study reinforces certain assumptions about community colleges and the students which attend them and opens others to question. Of more importance, however, the study exposed a behaviour pattern in society, related to education that is in a state of evolution. Clearly, there were specific differences in the characteristics of college students from those found in other studies conducted as recently as five years ago. These differences are both demographic and attitudinal. (Dennison, et al., 1975).

If colleges, universities and other institutions of post-secondary education are to respond effectively to a changing clientele, it is imperative that they be cognizant of the quality of the change and the degree to which it is occurring. For these reasons, it seems essential that efforts be made to monitor the system accurately and regularly, to base policy and practice upon real, rather than assumed data, and to reinforce the impression that the views of the broad community, including students, employers and taxpayers, are considered in the process.

In the context of the above, this particular study is a first step.

Notes

[1] The significance levels of x^2 test results by college on the basis of sex ranged from 0.005 to 0.61 with the province total being 0.00. On the basis of age the significance levels ranged from 0.03 to 0.82 with the province total again being 0.00. Thus, using a 0.05 level of significance criterion, there appeared to be no statistical non-response bias on the basis of age and sex at the provincial level. However, at the individual college level most of the smaller colleges had statistical bias while the larger ones did not.

Copies of the questionnaire used in the study and the detailed responses to each item are available from the authors upon request.

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Goals of Community Colleges in Canada A 1987 Perspective

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Abstract

Community colleges in Canada are characterized by diversity with respect to their relations with the government, the scope and range of their programs, and the ways in which they respond to societal needs. Nevertheless, the colleges all share a commitment to providing access to a wide range of individuals who need educational opportunities beyond secondary, school.

This study, examines the goals of community colleges in Canada as perceived by two key groups - chief executive officers, and government personnel in each province who are responsible for college development. The prime purpose was to determine the degree to which these individuals agree on the rating and ranking of their goals and the variations which exist among the provincial systems.

The results indicate that provincial college systems have continued to emphasize the goals which characterized their early development and reflect the differences in priorities which occur by province. While the two groups showed a high level of agreement in each region, a range of priorities existed within each group. In general, the study provided a restatement of the diversity of ways in which Canada's colleges are attempting to contribute to the economic, sociocultural, and educational development of the nation.

Résumé

Ce qui caractérise le mieux les collèges communautaires, c'est leur diversité, dont les relations avec le gouvernement, la portée et l'étendue des programmes ainsi que la façon dont ils répondent aux besoins de la société sont autant de variables. Cependant les collèges communautaires ont tous en commun l'engagement qu'ils ont pris d'accueillir des personnes très diverses ayant toutes besoin de suivre des cours après l'école secondaire.

Cette étude examine les objectifs des collèges communautaires au Canada tels que les conçoivent deux groupes essentiels : les directeurs généraux d'une part, et d'autre part, les fonctionnaires chargés du perfectionnement des collèges dans chaque province. Le but premier de cette recherche était de déterminer dans quelle mesure ces deux groupes sont d'accord sur les objectifs à atteindre et sur ceux qui ont un caractère prioritaire, et aussi de montrer s'il y a des différences entre les systèmes des diverses provinces.

Les résultats obtenus indiquent que les collèges communautaires continuant à promouvoir les objectifs qui ont contribué leur création; ils montrent aussi que l'on accorde la priorité à des objectifs différents selon les provinces. Même si les deux groupes interrogés semblaient tout à fait d'accord dans toutes les régions, on a pu remarquer qu'on accordait un caractère primordial à des objectifs très différents au sein de chaque groupe. D'une façon générale, cette étude a permis de réaffirmer que c'est par des moyens fort divers que les collèges communautaires du Canada participant au progrès de la nation, tant du point de vue éducatif et économique que socioculturel.

Introduction to the Study

As a partner within the wide spectrum of post-secondary educational institutions in Canada, community colleges have rapidly assumed a broadly accepted role as educational alternatives to both the traditional universities and to the more narrowly focussed technical and vocational institutes. The development of college systems in all regions of Canada is, in itself, a notable phenomenon. In general, this development has occurred over a period of two decades between 1955 and 1975 (Dennison & Gallagher, 1986). As Gallagher (1987) notes: "Extensive, differentiated, and designed specifically to be responsive to public policy shifts, the community college sector ... has been a catalyst for change and evolution in post-secondary education."

Even within their relatively short period of evolution, Canada's colleges have passed through three distinctive phases of development. The first, roughly between 1955 and 1970, was characterized by autonomy, diversity of curriculum, and virtually unbridled expansion. Government support, particularly in the fiscal arena, was generous. Democratization of opportunity in post-secondary education, accessibility and responsiveness to community needs, and curricular experimentation and comprehensiveness became the themes which characterized the new institutions.

Inevitably, however, financial pressure upon the public treasury generated by the creation of extensive college systems exceeded expectations, and governments soon sought ways to apply their fiscal brakes. Consolidation and constraint became the key phrases as education suspended its priority position within public policy to health, energy needs and social welfare. Between 1975 and 1980, most provincial college systems experienced increasing control by provincial governments, and with these controls, a considerable reduction in new program development, an inability to supply sufficient services to meet the demand, and the imposition of constraints upon student access by restricted admission to particular programs.

The third phase, during the eighties, is characterized by the advent of even greater economic difficulties as Canada entered a period of recession (MacDonald, 1985). Faced with accumulated deficits, partly as a consequence of rapid expansion of services in the public sector during the previous twenty-five years, governments at every level sought ways to reduce spending. Privatization of selected programs, the imposition of specified program priorities upon public institutions, designated funding strategies, and legislation to impose controls upon salary settlements, are all techniques by which governments have exercised fiscal constraints upon the public sector.

In the community colleges, the eighties have become years of retrenchment and restraint. The role of these institutions in contributing to economic growth has been emphasized, while activities aimed at personal and individual development of students have been funded less generously (Dennison, 1986). Colleges have also been encouraged to embark upon various kinds of entrepreneurial activity, designed to garner funds from the private and international community, an exercise which has produced mixed benefits. Notwithstanding these three phases of college development in Canada, the interesting question remains as to whether the colleges have maintained those goals and functions which generated their establishment in the early years, or whether they have amended their original purposes, adopted new priorities as a result of increasing government intervention into their activities, or simply made minor adjustments to accommodate fluctuations in funding formulae or external demands for services.

Before these questions can be addressed, however, it is important to recognize two characteristics of Canada's community colleges. The first is the relationship which exists between these institutions and their provincial governments. Unlike universities, which have long protected, and been protected by, an assumption that relative autonomy is necessary to ensure high academic quality of teaching and research, the colleges have neither sought, nor been granted, equivalent privileges in this regard.

Provincial college systems in Canada were created by direct and deliberate actions by governments as a matter of public policy during a period of accelerated expansion in educational services. While there are differences in degree among the provinces, colleges remain basically instruments of government policy in matters of tertiary education and job training. It is true that many colleges were created from vocational and technical colleges

operated directly by government ministers, and while in most cases governing boards were established to manage the new institutions, considerable duration continued to emanate from the appropriate ministry in the matter of curriculum.

The second important characteristic of Canada's community colleges is also related to the role taken by governments in their establishment. Given the wide diversity among Canada's provinces in educational structure, economic needs and priorities, and social and cultural history, it was inevitable that provincial college systems would adopt a variety of organizational models, governance policies, and patterns of curriculum. In this regard, rich diversity has become a feature of Canada's college systems in a manner consistent with the regional diversity which is so characteristic of this nation.

In spite of these diversities, however, it will be argued in this paper that certain common principles may be applied to the community college idea, irrespective of location. In other words, it is possible to identify a number of goals or general functions of colleges which are equally applicable to Newfoundland's institutions as they are to British Columbia's. It is the task of goal identification and description which will be addressed in the following section of this paper.

Community College Goals

An extensive review of the relevant literature accompanying the creation and evolution of community college systems in all regions of Canada is essential to the identification of those goals and functions which were set for these institutions. These literature sources are many and varied and, in many cases, unpublished. They include government policy statements, planning documents, legislative acts and ministerial announcements - all of which refer to the colleges' role, or proposed role, within the sociocultural and economic milieu of the particular region.

The second primary sources are the publications by the colleges themselves – mission statements, calendars, program outlines, periodic reviews and evaluation studies, and public announcements. Finally, it was necessary to review briefs from a variety of formal and quasi-formal organizations which have a vested interest in college programs and activities. The latter include associations of governing board members, instructor organizations, and various advisory groups.

The task of goal identification was far from easy. Rarely do government documents state, for example, that colleges are designed to respond to economic and political priorities in matters of public policy. However, such goals appear by implication. Mission statements in college calendars are usually idealistic statements of intent, they are less than specific as to what colleges are actually expected to accomplish. Furthermore, it is not at all unusual to find an element of contradiction among the various sources. While high priority may be given to one program area in a college mission statement, government documents in that province may be dramatically silent with respect to such college activity.

The Problem of Diversity

Reference has already been made to the diverse character of educational structures among the regions of Canada. Provincial college systems reflect this diversity in quite dramatic fashion. However, the literature also reveals another level of diversity which exists among the colleges in any given province. For example, largely as a result of their relationship to their communities, there are identifiable differences among the purposes of colleges in rural and urban centres in Saskatchewan, Quebec, or British Columbia. Furthermore, because of the institutional influences which provided the generic roots of colleges in Alberta and Quebec, differing priorities with respect to program development can be identified. In fact, the autonomy granted to Alberta's colleges as a result of their historical funding format has contributed to certain important differences among these separate institutions.

Nevertheless, even with respect and recognition of the problem of diversity, it is possible, as a first step, to delineate a number of common characteristics, or principles, which have contributed to the development of college systems in all provinces and regions of Canada. These common principles may be expressed as follows.

1. The community college is designed to provide access to educational opportunity for societal groups previously denied such access through the imposition of academic, socioeconomic, geographic and cultural barriers.
2. The community college will maintain a comprehensive curricular model which provides for both education and training within a broad range of both level and scope of program offerings.
3. Community colleges are designed to emphasize a student orientation through their priority upon quality instruction, faculty-student contact, and accessible and comprehensive counselling services.
4. Community colleges will maintain a community orientation through their governance and program advisory structures.
5. Community colleges will adapt to changes in external phenomena such as new student clienteles, demand for programs of training and education, technological change in program delivery and structure of the workplace.

These five general principles apply to colleges and college systems in all Canadian provinces and regions. Moreover, they are principles which appear to have endured since the establishment of the institutions and remained in force during the three phases of college development noted earlier.

The Goals Inventory

While recognizing both the problem of diversity and the existence of certain common principles which have guided the development of community colleges in Canada, the next task was to produce a set of statements which reflect the goals of community colleges in each region of the country.

The goal statements which were selected for the final inventory were prepared after an extensive review of the literature, noted earlier, which had been published from the initial period of college development in the late fifties up to and including 1986-87. The range of goal statements does not include, nor was intended to include, reference to all of the general principles outlined previously in this paper. The goal statements are designed to address the three essential roles of the community college as derived from relevant literature:

...the college as an educational institution
...the college as a training institution
...the college as an educational and sociocultural resource for the community

The first role focuses upon the students and is designed to produce broad educational competencies such as communication skills, critical thinking, and general knowledge, which are generally to be found in academic program areas. The second role defines the college as a training institution which prepares individuals to enter the workforce with usable job skills.

The third role is one in which the college provides sociocultural and educational opportunities and environments for a wide range of individuals and groups in the community and, in consequence, becomes a contributor to the overall quality of life in the college region. It must be emphasized that the three roles described above are not independent. Furthermore, a college may well be expected to serve all functions in varying degrees. However, the priority assigned to each role will necessarily influence the kind of institution which emerges.

The goal statements which were finally selected refer to each of the three major roles for the college, but also include additional references to the "political" functions which appear in government documents, ministerial announcements and economic and social planning reports. The final inventory contained the following statements:

- To prepare citizens to cope with problems of society.
- To encourage exploration and development of individual potential.
- To provide instruction in basic, general education.
- To provide broad, comprehensive curriculum for education and training.
- To impart knowledge and skills in vocations and in specialized skills.
- To train for employment.
- To provide access to educational opportunities.
- To serve educational interests and needs of community or region.
- To serve as a community resource.
- To help attain economic priorities of government.
- To help attain political priorities of government.
- To help attain social priorities of government.

The inventory was first prepared and then shared with a range of individuals who had considerable experience in the college movement and could be classified as experts. Following input from these individuals a number of changes were made, including, for example, the individual categorization of the three priorities of government.

Outline of the Study

Given that the goals and functions of community colleges in Canada have been the subject of numerous documents, reports, and publications from 1960 until the present time, the purpose of the study was to determine the current status of these goals, the priority assigned to them in the various provinces, and the different values which are placed upon these goals by key constituent groups within the college sector in all provinces.

The two selected groups which constitute the subjects in the study are the chief executive officers (president, principal, director general) in all of Canada's community colleges, and those officials (senior and middle management) responsible for college development in the appropriate government departments in each province. The ministry personnel were selected to represent those individuals, including the minister and his/her staff, who formulate policy, initiate planning, approve programs, advise, influence and direct college activities and generally ensure the continuation of the college system. They represent, collectively, the government agency responsible for the determination and application of policy. The chief executive officers are primarily responsible for the effective operation of the individual institutions. In collaboration with governing boards, the CEOs determine priorities with respect to their institution's goals and purposes.

These two groups constitute the "key" influences upon the setting of priorities regarding the goals of the provincial system and the individual roles of each of the community colleges. It may be argued that an effective college system would depend in large part upon the extent to which these groups share common understandings as to the purposes of the colleges. Conversely, disharmony could create tensions in the making of decisions such as budgetary allocation and program priorities.

The *Goals Inventory* (see Appendix) was prepared in both French and English and distributed among the government personnel and the college CEO's in all provinces of Canada. The numbers of respondents varied considerably among the provinces. In some provinces (Ontario, Alberta) the ministries include large numbers of personnel. In other provinces (Prince Edward Island, New Brunswick and Newfoundland) individuals from several ministries are involved in college activities. P.E.I. and Newfoundland have only one college. Table 1 summarizes the distribution and response rates to the Inventory by province. It should be noted that the individuals were asked to both rate the goals, under one of three categories, and also rank the goals in order of priority.

Table 1

Response by Province

Province	Ministry Personnel			Chief Executive Officer		
	Number Distributed	**Number Returned**	**Response Rate**	**Number Distributed**	**Number Returned**	**Response Rate**
British Columbia	18	16	89	15	14	93
Alberta	15	12	80	8	8	100
Saskatchewan	10	10	100	15	15	100
Manitoba	8	8	100	3	3	100
Ontario	36	32	89	22	20	91
Quebec	8	7	87	42	30	72
Prince Edward Is.	12	7	58	1	1	100
New Brunswick	14	8	57	9	7	78
Newfoundland	8	8	100	1	1	100
TOTAL	**129**	**108**	**84**	**116**	**99**	**85**

Results of the Study

The rankings of the goals by the two respondent groups by province are summarized in Table 2. Based on this table it is apparent that colleges in each province are perceived to respond to a different priority of goals. A summary of the results by province are reported below. Table 3 summarized the rating of the various goals by the provincial respondents.

British Columbia. The primary goal of British Columbia's colleges is consistent with the emphasis placed upon these institutions from the initial period of their development; i.e., to provide increased accesg to post-secondary education throughout the province. There was some variation between the two respondent groups with respect to curriculum, but general unanimity upon the value placed upon personal development and the response made by colleges to government priorities. The highest rating by CEO's was placed upon accessibility and training for employment while ministry personnel rated only accessibility (item 3) as consistently high in importance.

Alberta. There was broad agreement between the two groups on the ranking of goals. Both accessibility and general preparation for employment were assigned high priority. CEO's displayed greater unanimity on the rating of goals dealing with accessibility and training than did ministry personnel.

Saskatchewan. The role of the colleges in serving as an educational resource was ranked high by all respondents. This particular goal has received major prominence in this province from the inception of the colleges. However, the training function of the colleges was given much higher priority by the CEO's than by the ministry personnel. Both groups placed high priority upon the general education function of the colleges, a phenomenon which was not valued to the same extent in the other three western provinces. In items of rating of goals, the CEO's place the highest single value upon employment training while the ministry officials regard accessibility as most highly desired.

Manitoba. Training for employment in one form or another is the unanimous priority for the colleges as assessed by the two groups of respondents in Manitoba. General education is given a low ranking by both groups. The rating of goals shows a similarly strong agreement between the two constituent groups with employment related goals being assigned a consistently high value.

Ontario. CEO's and ministry personnel showed little disagreement on the primary goal of the Ontario colleges - preparation for employment! This goal has received prominence from the earliest establishment of the Ontario colleges. However, the CEO's ranked general education goals consistently higher than the ministry personnel. Accessibility goals were unanimously endorsed, albeit at a lower level in the hierarchy. With respect to the rating of goals, the ministry personnel were almost unanimous on the importance of the training for employment function. CEO'S, however, placed greatest value on the more liberal interpretation of training, i.e., "to impart knowledge and skills in vocations and specialized fields".

Quebec. Respondents in the province provided an assessment of goals unlike any other region of Canada. Within both groups "general education" was clearly the primary goal of the colleges. Accessibility ranked a close second, while job training received modest overall support. The CEO's appeared to rank job training somewhat higher than the ministry personnel. With respect to the value placed upon goals, the pattern was the same. General education was viewed as "very important" by virtually all participants. Conversely, both groups saw little value in colleges as instruments of government policy, with only "social priorities" drawing any notable support.

New Brunswick. New Brunswick's respondents gave unqualified support to colleges as preparation for employment. The ranking of goals by both groups proved to be remarkably consistent, with one exception. Ministry personnel saw colleges as responding to the economic priorities of government; CEO's rejected this function, and substituted one referring to colleges as community resources. With respect to the rating of goals, there was complete unanimity on the job training aspect of colleges. All respondents rated goals 7 and 8 as "very important".

Prince Edward Island. As there is just one college in this province, it is inappropriate to compare the ranking and rating of goals. However, it is interesting to note that government respondents appeared to see all three major goal areas, access, training, and education,

Table 2

Ranking of Goals by Province

	British Columbia						Alberta						Saskatchewan						Manitoba					
	CEO			MO			CEO			MO			CEO			MO			CEO			MO		
Community College Goals	M	SD	R	M	SD	R	M	SD	R	M	SD	R	M	SD	R	M	SD	R	M	SD	R	M	SD	R
• To prepare citizens to cope with the problems of society	6.4	2.7	7	7.6	3.1	8	7.3	2.2	9	6.8	1.9	8	5.5	2.5	6	6.4	2.3	6	7.7	3.8	8	8.5	3.1	10
• To encourage exploration and development of individual potential	6.6	2.1	8	5.5	3.0	7	4.9	1.8	5	4.2	2.2	3	5.8	1.9	7	5.9	2.0	5	4.3	3.5	4	6.4	3.6	6
• To provide access to educational, opportunities	3.6	3.2	1	3.4	2.6	1	3.4	1.8	2	2.9	2.4	1	3.9	2.5	3.5	2.6	1.5	1	4.0	2.6	3	4.1	2.8	3
• To serve educational interests and needs of community of region	4.3	2.8	2	4.9	2.8	4	5.1	2.7	6	4.9	3.1	4.5	3.3	2.7	1	3.2	2.9	2	6.7	3.8	5	5.1	1.9	4
• To provide broad, comprehensive curriculum for education and training.	4.6	3.1	5	4.2	2.7	2	4.7	3.0	3.5	6.5	3.4	7	8.7	3.5	10	8.9	2.6	11	8.3	4.7	9	5.5	3.3	5
• To provide instruction in basic, general education	5.2	2.5	6	5.4	2.3	6	6.4	3.5	7	6.0	3.0	6	3.9	1.9	3.5	4.0	3.5	3	9.7	2.3	11.5	7.6	2.3	9
• To impart knowledge and skills in vocations and specialized fields	4.4	2.3	3	4.7	2.8	3	3.1	2.0	1	3.9	2.8	2	5.2	2.4	5	5.7	3.7	4	2.3	0.6	2	2.9	1.8	1
• To train for employment	4.5	2.5	4	5.2	3.5	5	4.7	3.6	3.5	4.9	2.7	4.5	2.7	2.1	2	6.5	3.0	7	2.0	1.7	1	3.1	2.0	2
• To help attain economic priorities of government	8.1	2.9	9	8.7	2.6	10	9.7	1.4	10	9.0	1.8	10	7.8	2.5	8	8.3	1.8	9	7.3	2.1	6.5	7.1	3.2	8
• To help attain political priorities of government	12.0	0	12	1.4	2.2	12	11.1	1.2	12	11.7	0.7	12	11.5	0.8	12	10.9	1.6	12	9.7	2.1	11.5	10.6	1.7	12
• To help attain social priorities of government	10.0	1.5	11	9.6	1.5	11	10.9	0.7	11	9.6	1.4	11	10.5	0.9	11	8.5	2.8	10	7.3	1.5	6.5	10.2	0.7	11
• To serve as a community resource	8.4	1.9	10	7.7	2.7	9	6.6	3.0	8	7.1	3.1	9	8.2	2.3	9	7.1	3.2	8	8.7	2.3	9	6.7	3.5	7

Table 3

Rating of Goals by Level of Importance*

Province	High		Medium		Low	
	CEO	MO	CEO	MO	CEO	MO
British Columbia	3, 7, 8	3	1, 2, 4, 5, 6, 12	2, 4, 5, 6, 7, 8, 12	9, 10, 11	1, 9, 10, 11
Alberta	3, 7, 8	3, 7	2, 4, 5, 6, 12	2, 4, 5, 6, 8	1, 9, 10, 11	1, 9, 10, 11, 12
Saskatchewan	4, 8	3	1, 3, 6, 7	4, 6, 7, 12	2, 5, 9, 10, 11, 12	1, 2, 5, 8, 9, 10, 11
Manitoba	7, 8	3, 7, 8	2, 3	1, 2, 4, 5, 9, 12	1,4,5,6,9,10,11,12	6, 10, 11
Ontario	7	7, 8	1, 2, 3, 4, 5, 8, 12	2, 3, 4, 5, 9, 12	6, 9, 10, 11	1, 6, 10, 11
Quebec	6	6	1, 2, 3, 4, 5, 7, 8	1, 2, 3, 4	9, 10, 11, 12	1, 2, 6, 9, 10, 11, 12
New Brunswick	6, 7, 8, 12	7, 8	1, 3, 4, 5	3, 4, 5	2, 9, 10, 11	1, 2, 6, 9, 10, 11, 12
Prince Edward Island		4, 7, 8		2, 3		1, 5, 6, 9, 10, 11, 12
Newfoundland		3, 4, 8		2, 5, 6, 7, 12		1, 9, 10, 11

* Numbers refer to the items in the *Goals Inventory*

as important in their college. This point of view was also reflected in the rating of goals by the same group.. Three of the twelve goals received near unanimous support as "very important".

Newfoundland. Again, there was only one college in this province. However, the ministry personnel and the CEO appeared to hold the same view that the primary function of the college was to meet the educational needs of the community. Both employment training and education were also valued but at a lower level. Goal rating reflected the same priorities. Items 3 and 4, the accessibility goals, were the only ones to be universally endorsed as being "very important".

Observations and Conclusions

As a result of this study there are a number of interesting and pertinent observations which might be made concerning the role and function of community colleges in Canada.

(1) The three major roles of colleges, to expand accessibility to post-secondary education, to train for employment, and to incorporate an educational component into the curriculum, are all valued in every region of the country, albeit at varying levels of importance. These three functions are also traditional, in the sense that college related literature from all sources has, from the nineteen sixties, made reference to such activities as appropriate to the college sector.

(2) In every province respondents valued all goals at varying degrees with the notable and consistent rejection of those referring to colleges as instruments of government policy in social, economic and political areas. In spite of assertions that college-government relations are such that colleges have a direct responsibility within social and economic planning (Skolnik, 1985; Gallagher, 1987), even personnel in ministries of Job Training, Skills Development, and Manpower in various provinces declined to endorse these goals. Whether this function was dismissed on its face value or whether it was the implications which flow from it which were rejected is unclear.

(3) While acknowledging that considerable amount of agreement across Canada exists as to the major goals of colleges, there was also undeniable evidence that different degrees of importance were placed upon these goals in the various regions of the country. This finding is consistent with the acceptance of diversity among college systems (Dennison & Gallagher, 1986). In the most western provinces, the concept of accessibility in its various forms remains as a continuing role for the colleges. The prime exception is Manitoba whose colleges have experienced a quite different history of development (Department of College and University Affairs, 1978). In Ontario and New Brunswick, the longstanding commitment to broad preparation for employment as the primary college function seems as strong as ever. Quebec has, from the mid-sixties, accepted the college system with respect to its impact upon students (Denis &

Lipkin, 1972). In 1987, this commitment remains. In both Prince Edward Island and Newfoundland, where only one such institution is in operation, the notion of diversification of educational opportunities continues to be a primary role of the college. The data provided by this study substantiates the view that colleges in Canada were designed and continue to operate in the context of the sociocultural, economic and educational differences which exist among the provinces.

(4) The data from the two categories of respondents used in the study, ministry personnel and chief executive officers, invite some interesting observations. In all provinces the ranking of goals was remarkably consistent between the two groups, the correlations ranging between + 0.7 and + 0.9. In fact, from a statistical viewpoint, there was greater diversity on goal ranking within the groups than between the groups. The very high relationship between goal priorities was somewhat unexpected. It seems that a fair degree of communication regarding college functions and roles exists at provincial levels and, in consequence, a high level of agreement about what colleges are supposed to be doing.

While the foregoing observations can be made, statistical analysis of the data revealed considerable diversity among chief executive officers regarding college goals, presumably based upon their understanding of their own institutions. The diversity was particularly evident between urban and rural colleges, and by the size of the institution. It appears that the current financial climate has caused college presidents to establish priorities in urban areas which are not independent of the presence of other institutions, and to consider economies of scale which are a consequence of size.

Final Comment

This study has provided a restatement of the mission of community colleges in Canada as post-secondary educational institutions designed to provide increased access for those seeking broadly based preparation to enter the job market or to pursue further education in a variety of fields. While the general functions of colleges in all provinces follow these themes, there is also an element of regional diversity which distinguishes the character of the colleges among various provinces. Nonetheless, the prime differences are based more upon emphasis than upon the nature of the goals.

Given the fiscal pressures under which the institutions have had to operate during the past five years the question remains as to whether they can continue to emphasize their traditional functions under ongoing budgetary restraint and political social change. Based upon this study, it seems that any overt recognition of the colleges' role in meeting specific priorities of government has been resisted.

What is remarkable within this context is the degree to which the colleges, in the view of both government officials and chief executive officers, are pursuing their more broadly based functions. There is no denying the importance of "job training", but even that role is generally perceived in a broader sense of the term.

The study has also invited a variety of further research initiatives. How are the goals of colleges viewed by other important constituent groups; i.e., employers, instructors, students, and the wider community? What will be the impact of the current policy of encouraging industry based, rather than institutionally based programs? What will be the long-term effect of Canadian Job Strategy? Can the goal of broad accessibility be maintained in the face of further financial restraint? Can the comprehensive curriculum survive under more designated funding formulae? Will pressure upon universities force colleges to accommodate more students seeking academic programs?

All of these questions will contribute to increased pressure upon the community colleges in Canada and may redefine their roles. In 1987 it appears that, while a range of priorities exist, the colleges are continuing to place high value upon their historical functions. In doing so, these institutions continue to make a particular contribution to the sociocultural, economic and educational wealth of Canada.

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Appendix

DEPARTMENT OF ADMINISTRATIVE, ADULT AND HIGHER EDUCATION
THE UNIVERSITY OF BRITISH COLUMBIA
GOALS FOR COMMUNITY COLLEGES

NOTE:

The following list of goals for community colleges represents a summary of statements extracted from the relevant literature in Canada. (Reports by government, institutional evaluation teams, college calendars, task force studies, journal articles, etc.) They are presented in no particular order.

You are requested to rate the statements as not important, important, or very important. Further, you are requested to rank order the statements ("1" being most important). It is understood that you are judging the goal statements as applicable to community colleges in your province.

Community College Goals	RATING (use X)			Rank Order (Top Ten)
	not important	important	very important	(1st, 2nd, 3rd, etc.
1. To prepare citizens to cope with problems of society				
2. To encourage exploration and development of individual potential				
3. To provide access to educational opportunities				
4. To serve educational interests and needs of community or region				
5. To provide broad, comprehensive curriculum for education & training				
6. To provide instruction in basic, general education				
7. To impart knowledge and skills in vocations & in specialized fields				
8. To train for employment				
9. To help attain economic priorities of government				
10. To help attain political priorities of government				
11. To help attain social priorities of government				
12. To serve as a community resource				

Thank you for completing this inventory

Government ☐ Board Member ☐ CEO ☐

Administration ☐ Instructional Staff ☐

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Freshman Attrition in a College of Applied Arts and Technology of Ontario

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Abstract

This study, conceptualized using a "person-environment fit" model of dropout, examined differentiated freshman attrition and persistence in a College of Applied Arts and Technology of Ontario. Also examined were the magnitude and timing of dropout as well as the ability of the model to explain and predict freshman attrition/persistence vs academic success/failure. The relative importance of student and institutional characteristics in the withdrawal process was also assessed. Results showed that 30% of the freshman cohort dropped out in the first year, with approximately half doing so in the first semester. Those variables which measured the nature of the student-institution interaction accounted for a greater amount of the variance in persistence/withdrawal than did the background and entry-level, characteristics of the students alone. This confirms the validity of the "fit" model of dropout and suggests that college administrators could significantly reduce freshman attrition by carefully managing the college learning environment. Consistent with U.S. studies comparing factors influencing dropout in commuter and residential institutions, this study found academic integration and educational commitment to be of greater importance to persistence than social integration and institutional commitment. A student's intention to leave the college at mid-semester and his/her confidence in success were also found to be important determinants of freshman attrition.

Résumé

Cette enquête, menée à partir d'un modèle visant à faire ressortir la concordance entre la personnalité et l'environnement du décrocheur, passe en revue les divers comportements des étudiants de première année vis-à-vis l'abandon ou la persévérance dans un collège d'arts appliqués et de technologie de l'Ontario. D'autres facteurs ont été pris en compte tels que la proportion de décrocheurs et le moment où se produit l'abandon des cours; on a tâché de plus de vérifier dans quelle mesure le modèle permettait d'expliquer ou de prévoir l'abandon ou la persévérance des nouveaux étudiants plutôt que leur réussite ou leur échec sur le plan académique. On a tenté d'évaluer par ailleurs quelle était la part de responsabilité a accorder aux caractéristiques personnelles des étudiants au moment de l'entrée et à celles de l'institution dans la décision d'abandon. Les résultats de la recherche ont montré que 30% de la cohorte des nouveaux étudiants abandonnaient leurs études dans le courant de la première année, dont la moitié dès le premier semestre. Les variables considérées, lesquelles mesuraient aussi le degré d'interaction entre l'étudiant et l'établissement, permirent d'établir que cette interaction comptait nettement plus que le milieu d'origine des étudiants ou leur niveau d'entrée dans la décision d'abandonner des études ou de persévérer. Ceci confirme donc qu'il existe un modèle d'ajustement particulier au décrocheur et laisse entendre que les administrateurs des collèges pourraient réduire considérablement le taux d'abandon dans leur établissement s'ils prenaient soin d'y offrir de bonnes conditions d'apprentissage. Tout comme les recherches américaines qui ont comparé les facteurs d'abandon dans les universités éloignées et dans celles de la région de l'étudiant, cette étude met en lumière que là où il y a intégration intellectuelle et engagement vis-à-vis de l'enseignement, la persévérance est plus grande que là où on se préoccupe surtout d'intégration sociale et d'intérêts institutionnels. Par ailleurs une intention personnelle de quitter le collège en cours de semestre et la confiance de l'étudiant dans sa propre réussite peuvent être également des facteurs d'abondon importants.

Introduction

Concern for the wastage of human and financial resources has made student withdrawal behaviour in postsecondary education an issue of considerable practical as well as scholarly interest (e.g., Astin, 1975, 1985; Cope & Hannah, 1975; Lenning, Beal, & Sauer, 1980; Pantages & Creedon, 1978; Ramist, 1981; Spady, 1970; Tinto, 1975, 1986). The many studies conducted in the U.S. (Astin, 1972; Bayer, Royer, & Webb, 1973; Panos & Astin, 1968; Ramist, 1981) have generally reported the same findings: about 40% of entering freshmen nationwide never achieve a baccalaureate degree. Tinto (1982) has found that, as a national phenomenon, attrition has been a surprisingly stable feature of the U.S. higher education enterprise.

While published studies of attrition in Canadian postsecondary institutions are few (Anisef, Paasche, & Turrittin, 1980; Jones & Dennison, 1972; Lam, 1984; Mehra, 1973; Pascal & Kanowitch, 1979; Ungar, 1980), and there have been no national studies, available

data suggest that our rates do not differ substantially from those in the U.S. An analysis of withdrawal from the Colleges of Applied Arts and Technology of Ontario (CAATS) between 1974 and 1979 (Stoll & Scarff, 1983), found total student withdrawal rates of from 44. 1% to 47. 1%. For the entire college system, approximately 14,000 students from each of the 1974 to 1979 cohorts failed to graduate, constituting a group of at least 84,000 students who left the Ontario college system without receiving a diploma.

In order to minimize the loss of talent, the waste of limited educational resources, and the vocational, financial, and personal setbacks that result from student attrition in Canadian higher education (Gilbert & Gomme, 1986; Gomme & Gilbert, 1984), additional information on the dropout process must be obtained. It might be possible to enhance student persistence in colleges by developing and implementing specific institutional policies and practices if it were clear which policies and practices would be most effective. The U.S. research literature indicates that while similarities exist between the variables associated with attrition across institutions, there are significant differences of sufficient magnitude to contraindicate wholesale generalizations from one student body to another, or from one institution to another. A necessary precursor to a reduction in student attrition in the colleges of Ontario, then, is the design and implementation of empirical studies of the phenomenon within the CAAT system. In this way we may arrive at some conclusions regarding the causes of dropout and which institutional policies and practices would improve persistence.

Research Issues

Research on attrition in the 1980s has largely attempted to validate the person-environment fit models of attrition (Tinto, 1975, 1986) in different types of postsecondary institutions. These studies have identified several issues for continued research.

A number of investigators (Pascarella & Chapman, 1983; Pascarella, Duby, & Iverson, 1983; Pascarella, Duby, Miller, & Rasher, 1981; Terenzini & Pascarella, 1984) have shown that the variables influencing attrition in commuter institutions differ from those operating in residential colleges and universities. The first major difference found was in the relative contributions of Tinto's (1975) constructs of institutional and goal commitment. Institutional commitment had a much stronger direct effect than goal commitment in residential institutions, while goal commitment had a somewhat stronger direct effect than institutional commitment in the sample of commuter colleges. A second notable difference across institutions was in the role played by Tinto's central concepts of social and academic integration. The findings suggest that in non-residential institutions, commitment to the college or university at the end of the freshman year is defined largely by successful and personally satisfying interactions with the academic, rather than the social systems of the institution. It may well be that in many commuter institutions the opportunities for social involvement are sufficiently few that the concept of social integration has little meaning in terms of bonds to the institution.

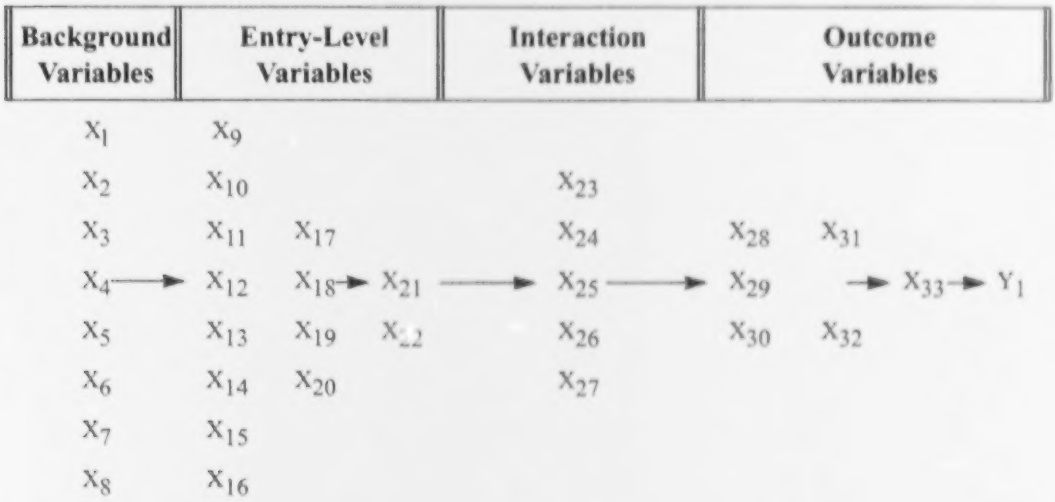
The role of background and student-institution interaction variables in influencing voluntary dropout also appears to differ between commuter and residential institutions. Several studies (Munro, 1981; Pascarella, Duby, & Iverson, 1983; Pascarella, Duby, Miller, & Rasher, 1981; Pascarella & Terenzini, 1983; Terenzini & Pascarella, 1978) have found that in residential institutions the influence of background characteristics is largely indirect, mediated by social integration, the commitment variables, or living on campus. Conversely, in the commuter colleges the impact of background characteristics on persistence was not totally transmitted through the freshman year experience. Rather, high school achievement and affiliation needs had a direct effect on persistence, and goal commitment, which had the largest direct effect on persistence in the commuter institutions, was itself most strongly influenced by background traits such as achievement needs, and uninfluenced by either academic or social integration. An important empirical issue, then, is whether additional differences in the operation of the main constructs of Tinto's (1975, 1986) model would be found in a predominantly vocationally oriented commuter institution. The CAATs of Ontario are an ideal venue for such a test.

A final research issue concerns the evaluation of Tinto's (1975) model with differentiated attrition. As many researchers have noted (Kneoll, 1960; Pantages & Creedon, 1978; Tinto, 1975), two types of dropouts have been described in the literature and have been variously labelled as voluntary withdrawals vs academic dismissals (Tinto, 1975), successful withdrawals vs unsuccessful withdrawals (Hanson & Taylor, 1970), nonacademic dropouts vs academic dropouts (Starr, Betz, & Menne, 1972), passing dropouts vs failing dropouts (Prediger, 1965), and achieving withdrawals vs nonachieving withdrawals (Zaccaria & Creaser, 1971). As the labels imply, the fundamental distinction between the two groups is that one group leaves the college in good academic standing, while the other does not. All tests of the models of dropout described earlier have included only voluntary dropouts or both groups combined; none has assessed the models with both groups included in the dropout sample and differentiated from each other.

A Model of Dropout and Research Objectives

The model of dropout utilized in this study is an integration of those proposed by Tinto (1975) and Bean (1980). Bean's research (1983) has demonstrated the value of the "intent to leave" variable in accounting for the variance in voluntary dropout, and tests of Tinto's model (Terenzini & Pascarella, 1980) have indicated the validity of its constructs. The present model is of the longitudinal-process type and specifies four classes of variables; eight background variables, which include demographic characteristics and academic history; fourteen entry-level variables, which describe the characteristics of the student as he or she enters the college, including Tinto's constructs of goal and institutional commitment; five interaction variables, which describe the interaction between the student and the institution and include academic and social integration; and six outcome variables such as intent to leave and persistence/dropout. The interactions between the variables in the model are assumed to be linear and additive in accordance with the assumptions of the required statistical procedures. The hypothesized causal sequence of the variables is also consistent with the theories of Tinto (1975) and Bean (1980).

A Model of Dropout



Using attrition research and theory as a guide to minimize specification error (Pedhazur, 1982), the variables selected for inclusion in the model are:

Background Variables

X_1 = gender
X_2 = socioeconomic status
X_3 = age
X_4 = mother tongue
X_5 = high school program level
X_6 = high school concentration
X_7 = high school average
X_8 = level of prior education

Entry-Level Variables

X_9 = financial aid
X_{10} = changed residence
X_{11} = confidence in success 1
X_{12} = educational goals
X_{13} = contact with college
X_{14} = job orientation 1
X_{15} = value of education 1
X_{16} = academic skill needs
X_{17} = rating of college
X_{18} = vocational uncertainty
X_{18} = rating of program
X_{20} = concern for finances
X_{21} = ed. commitment 1
X_{22} = inst. commitment 1

Interaction Variables

X_{23} = dissatisfaction
X_{24} = use of college services
X_{25} = actual part-time work
X_{26} = academic integration
X_{27} = social integration

Outcome Variables

X_{28} = orientation to job 2
X_{29} = value of education 2
X_{30} = confidence in success 2
X_{31} = ed. commitment 2
X_{32} = inst. commitment 2
X_{33} = intent to leave
Y_1 = dropout/persist vs success/failure

The research issues identified above, as well as the paucity of empirical data on dropout in Canadian colleges, indicate a need for further study of differentiated attrition in a non-residential postsecondary institution of technical/vocational education. The objectives of the present study, therefore, were:

1. To describe the magnitude and timing of freshman attrition in a College of Applied Arts and Technology.
2. To identify any differences in the background, entry-level, interaction, and outcome characteristics of successful and unsuccessful dropouts compared to successful and unsuccessful persisters.
3. To estimate the relative importance of academic and social integration, and educational and institutional commitment in distinguishing between the criterion groups.
4. To test the validity of the proposed model of dropout in explaining differentiated attrition in a College of Applied Arts and Technology of Ontario.
5. To assess the relative importance of background and entry-level variables, compared to interaction and outcome variables, in explaining dropout in a commuter institution.
6. To determine whether students can be classified as dropouts or persisters with an accuracy greater than chance, using their background, entry-level, interaction, and outcome characteristics.

Methods

The subjects of this study were the 3,879 full-time students beginning their first semester at Humber College of Applied Arts and Technology in the fall of 1986. A longitudinal design was employed rather than an *ex post facto* methodology since this permits an explanation of factors which affect student withdrawal at the very time they are exerting their effects and provides a clearer view of the interaction of factors which influence student departure. (Tinto, 1975; Eckland, 1964; Jex & Merrill, 1962; Marks, 1967).

Freshman characteristics were measured at four points in time. Their background and entry-level characteristics were collected in the first week of classes via the Freshman Survey utilizing a 116 item, largely multiple-choice and Likert type questionnaire. A second set of data reflecting students' interactions with the college was collected approximately two months later via the Student Satisfaction Survey utilizing a 96 item, largely multiple-choice and Likert type questionnaire designed to measure aspects of students' mid-semester attitudes, perceptions, and behaviour. At the beginning of the second term students' fall semester mid-term and final grades, as well as their winter 1987 enrolment status, were extracted from the College student records system. This was repeated in the fall of 1987 to determine again the enrolment status of the 1986 cohort. Students were classified as first- or second-semester dropouts, persisters, stopouts, or part-time depending upon their fall 1987 enrolment status.

Independent and Dependent Variables

The operational definition of each variable in this study was derived either from the dummy coding of a questionnaire item or via principal components factor analysis with varimax rotation. In the latter case the procedure advocated by Terenzini and Pascarella (1977) was used. Only items with loadings above |0.40| were retained for each factor. When an item's loading was greater than |0.40| on more than one factor, the item was assigned to the factor on which it had the highest loading.

Subjects' scores on these factor-based variables were computed by first reversing the response values on items where necessary to produce a unidirectional scale, and then converting these raw scores to standardized scores. Factor scores for each subject were then calculated by summing these standardized response values for all items loading on each factor, with a constant of twenty being added in order to eliminate negative values. Additional details on these procedures including complete factor scales and item composition may be found in Dietsche (1989). Each independent variable in this study was operationalized as follows:

gender: female = 1 male = 0

socioeconomic status: parents' occupation (Blishen Index) plus parents' highest level of education

age: age in years

mother tongue: English = 0 other = 1

high school level: advanced = 0 general or basic = 1

high school concentration: academic = 0 business/tech. = 1

high school average: final average in percent

high school academic involvement: the sum of three items measuring the frequency with which students studied, skipped classes, and completed homework assignments on time

level of education: less than or equal to grade 12 graduation = 0
greater than grade 12 graduation = 1

financial aid: not receiving aid = 0 receiving aid = 1

changed residence: did not move = 0 moved = 1

confidence 1: factorially derived with three Likert items (e.g. "I am certain to complete my program successfully").

educational goals: six-item factorially derived scale measuring students' goals in attending college.

college contact: a four-item scale of student contact with college publications and orientation scored no contact = 1, contact = 2

job orientation 1: a factorially derived scale with two-items (e.g. "I am attending college only until a job is available").

value of education 1: a six-item factorially derived scale measuring a student's perception of the value of his/her education.

academic skill needs: students' assessment of their literacy, numeracy, and study skills development needs scored from 4 = "could benefit greatly" to 1 = "of no benefit at all."

rating of college: the student's ranking of college with third-choice = 1 to first-choice = 3.

vocational uncertainty: an eight-item factorially derived scale measuring students' uncertainty about their future career.

rating of program: student's rating of his/her program with first-choice = 2, other = 1

concern for finances: a four-item factorially derived scale measuring a student's financial status.

educational commitment 1: a seven-item factorially derived scale measuring the student's desire to graduate from college.

institutional commitment 1: a fourteen-item factorially derived scale assessing a student's perceptions of the college.

dissatisfaction: a four-item factorially derived scale reflecting a student's negative feelings regarding faculty, courses, and other students.

use of college services: a measure of student utilization of seven different college services with non-use = 1 and use = 2.

actual part-time work: assessed whether a student held a job while enrolled in college with non employment = 0, and employment = 1.

college academic involvement: same as high school measure but with reference to academic activities during first two months of college.

academic integration: the sum of two factorially derived variables: perception of program, a 12 item scale measuring a student's perception of his/her program; and academic involvement, a four-item scale measuring frequency of studying, class absenteeism, homework completion, and whether a course had been dropped.

social integration: the sum of three factorially derived variables and one non-factor-based variable: personal development, a seven-item scale measuring the degree of personal growth in college; interaction with faculty, a six-item scale assessing the frequency and nature of interactions with faculty; interaction with peers, a five-item scale describing the student's friendships in college and attitudes toward other students; extracurricular involvement, measured the frequency with which students participated in seven activities such as clubs, organizations, and athletics.

intent to leave: a nine-item factorially derived scale measuring the likelihood of a student's leaving the college.

Five independent variables were measured twice, once at the beginning of classes and again two months later. These were: orientation to job, value of education, confidence in success, educational commitment, and institutional commitment. In each case the operational definition was identical on both occasions. These five variables constituted repeated measures and permitted the assessment of changes in student attitudes and perceptions over time.

The criterion or dependent variables had four values, successful persister, unsuccessful persister, successful dropout, and unsuccessful dropout. Dropout in this study was defined from the institutional perspective. A student who left the subject institution during or at the end of the freshman year was classified as a dropout if he or she did not return to the same institution for the second year of studies. The operational definition for each criterion group was as follows:

successful persisters: obtained an overall program average of 60% or more at the end of the first semester and continued their studies for the second and third semesters.

unsuccessful persisters: overall average at the end of the first semester was less than 60% and they continued their studies into the second and third semesters.

successful dropouts: left college at the middle of the first semester with a mid-term average above 60%, or left at the end of the first semester with a final grade average above 60%.

unsuccessful dropouts: terminated their enrollment at mid-semester with a mid-term average below 60%, or left the college at the end of the first semester with a final average below 60%.

All statistical analyses were accomplished utilizing various computer programs available from the SAS software package (SAS Institute, 1982).

Results

Table 1 shows that 30% of the students who began a Humber College program in the fall of 1986 dropped out during the freshman year. This figure is consistent with that reported by Stoll and Scarff (1983), who found an average freshman year dropout rate of 32% for the entire CAAT system between 1974 and 1979. Approximately half the students who left college did so in the first semester, either at mid-term or at the end of the semester. The remaining half departed at the middle or end of the second semester.

In financial terms this rate of attrition represents a loss to the college of approximately 7.2 million dollars in revenue. It would seem, therefore, that college administrators seeking to reduce the impact of shrinking revenues due to declining enrollments would be well advised to consider methods of reducing student attrition in their institutions.

Table 1

Attrition Rates in the Freshman Year

Dropout Period	N	% of Total Full-Time Sample
First semester	538	14.1
Second semester	608	15.9
Total	1146	30.0

Table 2

First-Semester Dropouts by Type

Dropout Type	N	%
Unsuccessful Dropout	299	55.6
Successful Dropout	175	32.5
Unclassified	64	11.9
Total	538	

Table 2 indicates that 55.6% of those who dropped out were academically unsuccessful, while 32.5% were successful. That is, not all dropout represents academic failure.

Student Characteristics at Entry

Mean scores by criterion group for each variable examined in this study are presented in Table 3. A comparison of the means for the background and entry-level characteristics of the two dropout groups with those of the successful persisters using Scheffé's multiple comparison procedure revealed several similarities and differences.

No statistically significant differences were observed between the successful dropouts (SD) and the successful persisters (SP) on both intellective and non-intellective measures at the beginning of classes. The unsuccessful dropouts (UD), on the other hand, differed on the intellective measures and were seen as being less capable academically than the successful persisters. For example, they had lower mean high school leaving averages and scored lower on the Nelson-Denny Reading test and a test of math skills. These findings are comparable to those of De Rome and Lewin (1984), Hackman and Dysinger (1970),

Table 3

Group Means for Study Variables

Variable Name	SP	UP	50	UD
Gender	0.62	0.52	0.59	0.56
Age	20.7	20.1	22.0	20.2
Socioeconomic status	19.5	19.3	19.7	19.9
Mother tongue	0.20	0.26	0.19	0.30
Prior education	0.53	0.34	0.41	0.29
Nelson-Denny Reading	11.7	9.7	12.7	9.2
Math placement test	79.4	60.4	90.5	65.6
High school average	70.2	67.4	71.5	66.2
H.S. program level	0.41	0.70	0.53	0.71
H.S. concentration	0.33	0.61	0.39	0.35
Changed residence	0.34	0.17	0.33	0.27
Financial aid	0.22	0.18	0.24	0.18
Rating of college	0.77	0.73	0.79	0.77
Rating of program	0.94	0.90	0.98	0.95
Educational goals	24.8	24.5	24.3	24.5
Concern for finances	19.4	19.1	19.7	19.3
College contact	6.7	6.4	6.7	6.3
Vocational uncertainty	16.7	18.1	17.2	18.6
Academic skill need	30.2	32.2	30.8	32.2
Actual part-time work	0.59	0.71	0.58	0.76
College service use	10.0	10.8	10.2	10.4
Dissatisfaction	11.1	12.7	12.1	12.4
Academic integration	40.3	38.3	38.7	36.5
Social integration	69.7	69.4	68.8	68.5
Value of education 1	19.6	19.5	19.5	19.5
Value of education 2	19.8	19.7	19.4	19.2
Confidence 1	19.8	19.0	19.6	19.4
Confidence 2	20.1	18.6	18.4	17.5
Job orientation 1	3.4	3.8	3.4	3.7
Job orientation 2	3.4	4.1	3.8	4.3
Educational commitment 1	32.0	31.5	31.1	31.2
Educational commitment 2	31.8	30.4	28.3	27.5
Institutional commitment 1	19.6	19.3	19.6	19.4
Institutional commitment 2	19.7	19.3	19.3	19.0
Intent to leave	15.3	18.9	19.7	21.5

Table 4

Chi-Square Test: Prior Education

Prior Education	S0	SP	UD	UP
=< grade 12	55	676	71	80
graduation	58.5%	47.1%	71.0%	66.1%
> grade 12	39	758	29	41
graduation	41.5%	52.9%	29.0%	33.9%
	$X^2 = 37.49$	df = 3	p = 0.0001	

Table 5

Chi-Square Test: High School Program Level

Program Level	S0	SP	UD	UP
Advanced	44	839	29	36
level	46.8%	58.5%	29.0%	29.7%
General or	50	595	71	85
basic level	53.2%	41.5%	71.0%	70.3%
	$X^2 = 67.50$	df = 3	p = 0.0001	

Rose and Elton (1966), and Starr, Betz, and Menne (1972) for university students. In addition, it was found that at entry to the college the unsuccessful dropouts were less certain about their vocational goals and future occupation than were the successful persisters. In a college with a curricular focus on technical and vocational education, this characteristic is sure to be a liability.

Group differences on intellective measures were further clarified with chi-square analyses of the academic background variables for all four criterion groups. The significant differences observed were between those students who were academically successful and those who were not, as is evident from Tables 4 and 5.

Thus, the unsuccessful persisters (UP) and unsuccessful dropouts had a lower level of previous education when they enrolled in college, compared to the successful persisters and successful dropouts. They also came from a general level high school program rather than the advanced level program characteristic of the successful persisters and successful dropouts.

These findings are similar to those obtained from other studies which examined the secondary school characteristics of Ontario college dropouts (Stoll & Scarff, 1983) and graduates (King, 1983). The findings of this study differ, however, in that it is clear that intellective measures alone cannot account for differentiated freshman attrition; students who scored high, as well as students who scored low on these variables, withdrew from college.

Student Characteristics at Mid-Semester

A comparison of the attitudinal characteristics of the criterion groups at mid-semester showed that both dropout groups exhibited substantial differences from the successful persisters. Overall, they were less confident in their success, less academically and socially integrated, less committed to their education and to the institution, and had a higher intention to leave the college.

The identification of possible differences in the withdrawal process for the successful and unsuccessful dropouts was provided by the repeated measure variables. A t-test for dependent measures was conducted on each variable, examining the significance of the difference between the entry-level and mid-term means for each criterion group presented in Table 3. These data represent within-group attitudinal and behavioral changes and are summarized in Table 6 in terms of the mean change value for each group.

Table 6

Change in Repeated Measure Variables

Variable Name	Criterion Group SP	UP	50	UD
Value of education	0.26 *	0.26 *	-0.12	-0.29 *
Confidence in success	0.30 *	-0.33	-1.13*	-1.84 *
Educational Commitment	-0.20 *	-1.15 *	-2.73*	-3.66 *
Institutional Commitment	0.04	0.03	-0.26*	-0.38 *
Academic Involvement	0.16 *	-0.62 *	-0.37	-1.17 *
Job Orientation	0.05	0.24	0.38*	0.59 *

*indicates significant change

While the attitudes of the dropouts became more negative, those of the persisters either improved or remained unchanged. Differences observed between the two dropout groups suggested possible variations in the events leading to, and factors precipitating, withdrawal. The successful and unsuccessful dropouts were similar in that both groups exhibited a significant decrease in confidence in success and educational and institutional commitment, and an increase in their orientation to a job. The successful dropouts, however, showed neither a reduction in the perceived value of their education, nor a decline in their academic involvement in college as compared to high school.

Assuming a difference in academic ability between the two groups, as previous findings indicate, one might describe a possible sequence of events leading to the withdrawal of the unsuccessful dropouts. It would appear that both dropout groups began their studies with the same educational goals, perceived value of education, and commitment to graduation. The unsuccessful dropouts, however, were less certain about their occupational goals, and were less involved in studying, attending classes and completing homework assignments in high school.

Within the context of an academic environment lacking extrinsic rewards promoting high levels of involvement, such students were likely to begin skipping classes. This would have led to their falling behind in their courses, missing due dates for assignments, and failing class tests. In turn, these experiences would have resulted in reduced confidence in success, and negative perceptions of their program. Indeed, an alienation towards the college and its educational goals is suggested by the reductions in perceived value of education and institutional and educational commitment. This is further supported by the fact that this group increased its involvement in part-time employment above the level of its expectation at the start of classes, and increased in its orientation to an outside job. College departure for this group seems most likely to have been the product of a cumulative process beginning with poor academic and study skills, and vocational uncertainty, leading to failure, dissatisfaction, and alienation, and culminating in withdrawal from the college.

While it is clear that academic failure played a significant role in the departure of the unsuccessful group, this is certainly not true of the successful dropouts. It is more likely that the negative perceptions of the institution and their program which developed over the first-half of the semester were most instrumental in the dropout of the successful group. Indeed, this group maintained its academic involvement and perceived value of education, suggesting that these students may have transferred to another college, either at the beginning of the second semester or the following fall. Their significantly increased orientation to a job, however, indicates that they could have also entered the workforce.

The cause of these negative perceptions may have been the result of insufficient academic challenge for this group. They recorded the highest mean high school leaving average, Nelson-Denny Reading test, and math placement test scores of all the groups. This, combined with a somewhat higher mean age of 22 years compared to 20 years for the

other groups, suggests that perhaps this group was not sufficiently stimulated intellectually and found the college environment unsuited to their needs.

Table 7 presents the results of a multiple discriminant analysis of the four criterion groups and shows that the new model of dropout accounted for 25% of the variance between the groups. Those variables identified with an asterisk have structure coefficients above 0.30 (Pedhazur, 1982) and suggest that the dimension on which the groups differed might best be described by the term educational certainty. Students who were academically successful and who persisted in their program were more involved in, and committed to, their education, and more confident in their success, compared to those who were unsuccessful and dropped out.

The analysis also indicated that the level of a student's integration into his or her academic program was most effective in differentiating between the groups. The strength of the student's intention to leave the college at mid-term, the level of programming followed in high school, and changes in confidence and educational commitment also made significant contributions to group discrimination, in descending order of importance. Thus, the main constructs of both Tinto and Bean were found to be important in distinguishing between successful and unsuccessful persisters and successful and unsuccessful dropouts.

Determinants of Freshman Attrition

These results suggest that in a commuter college with a focus on technical/ vocational education, persistence is determined primarily by a student's integration into the academic environment and by his or her educational commitment at the middle of the first semester. Within the context of Tinto's model it is clear that the above two constructs are instrumental in explaining student persistence vs withdrawal, while those of institutional commitment and social integration are much less important. This is consistent with the findings obtained by Pascarella and his colleagues (Pascarella & Chapman, 1983a; Pascarella, Duby, & Iverson, 1983) for commuter colleges. Thus, the factors which determine persistence in the commuter college are different from those in the residential university. In the former, student involvement with faculty, peers, and extracurricular activities is of considerably less importance in determining persistence. What is of major importance, is the student's perception of his or her program as an intellectually stimulating and rewarding activity, which will be of value to his or her future occupational success. Likewise the degree of student involvement in the academic behaviours of attending classes, studying, and completing homework assignments makes a significant contribution to the determination of persistence. The importance of Bean's constructs of intent to leave and confidence was also clearly demonstrated and argues for their inclusion in a revised model of dropout.

The relative importance of background and student-institution interaction variables was examined in this study by conducting discriminant analyses comparing persisters and dropouts. Three different sets of independent variables were used with each analysis,

Table 7

Coefficients for First Canonical Variate

Variable Name	Structure Coefficient	Standardized Coefficient	Raw Coefficient
Gender	0.097	-0.111	-0.226
Age	0.023	-0.082	-0.017
Socioeconomic status	-0.031	-0.152	-0.058
Mother tongue	-0.121	-0.120	-0.296
Prior education	0.287	0.068	0.136
High school average	0.278	0.168	0.025
H.S. program level	-0.372	-0.289	-0.579
H.S. concentration	-0.156	0.069	0.143
Changed residence	0.130	0.041	0.088
Financial aid	0.048	0.020	0.047
Rating of college	0.010	-0.066	-0.156
Rating of program	0.015	-0.070	-0.304
College contact	0.223	0.135	0.126
Educational goals	0.067	0.030	0.009
Vocational uncertainty	-0.201	0.066	0.011
Concern for finances	0.016	0.070	0.021
Academic skill need	-0.192	-0.068	-0.010
Actual part-time work	-0.176	-0.076	-0.155
College service use	-0.152	-0.037	-0.015
Dissatisfaction	-0.273	-0.119	-0.035
Academic integration	0.703 *	0.558 *	0.193
Social integration	0.245	-0.059	-0.022
Confidence	0.453 *	0.263 *	0.106
Value of ed.	0.214	-0.183	-0.106
Job orientation	-0.301 *	-0.017	-0.007
Educational commitment	0.497 *	0.219 *	0.060
Institutional commitment	0.291	0.053	0.029
Intent to leave	-0.624 *	-0.320 *	-0.054

Canonical r = 0.50 R^2 .25

	Value	F	Num df	Den df	p
Wilk's Lambda =	0.6863	6.939	99	5129	0.001

resulting in a F statistic significant at the 0.0001 level. It was found that while the utilization of information on the background, entry-level, interaction, and outcome characteristics of students accounted for the greatest amount of variance in dropout (R^2 = .25), the interaction and outcome set alone (R^2 = .14) accounted for three times the amount of variance explained by only the background and entry-level set (R^2 = .044). Thus, the factors which promoted persistence in the sample of commuter college freshmen examined in this study were a product of the interaction between the student and the institution, rather than simply the background and entry-level characteristics of the students themselves. This is certainly consistent with the person-environment fit models of dropout described in the literature and suggests that it is possible for those who manage institutions of higher education to improve persistence in their freshman clientele. In essence, the two groups who dropped out in this study did so because of a poor "fit" between their characteristics and those of the institution. For the unsuccessful dropouts the academic demands were too great, while for the successful dropouts they were not high enough. Further research is required to elaborate on this interpretation.

An important first step in dropout prevention would involve the identification of potential dropouts as they enter the institution. Such "early-warning" systems have been cited in the literature as important components of retention programs (Noel, Levitz, & Kaufmann, 1982). Discriminant classification analyses indicated that it would be possible to predict dropout/persistence with an accuracy greater than chance by gathering information on freshman student characteristics. While it would be feasible to make such predictions using only background and entry-level information, Table 8 shows that the most accurate predictions can be made only when this is combined with information on student attitudes and behaviour during the first-half of the first semester.

This is consistent with the finding that dropout/persistence is highly influenced by the latter set of variables. Thus, it would be possible to make relatively accurate predictions regarding student persistence at the middle of the first semester. This is too late, perhaps, to reverse the dropout decision for some students, but certainly not too late for the vast majority who, as was seen, leave the institution at the end of the first or second semester.

Table 8

Classification Accuracy by Variable Set

	Percent of Cases Correctly Classified			
Set of Variables	50	SP	UD	UP
Background and Entry-Level	38.3	42.5	44.0	52.1
Mid-Term Set	35.1	64.2	44.0	34.7
All Variables	40.4	63.5	59.0	54.5

Implications for Retention

The results of this study have implications for retention both in terms of how colleges are managed and the specific policies and procedures which could increase freshman persistence.

The responsibility for initiating efforts to improve student retention falls within the jurisdiction of college administrators and involves the policy decision to implement a comprehensive and coordinated program of institutional research. Indeed, Dennison and Gallagher (1986) in their critical analysis of Canada's community colleges have indicated that this activity is rarely associated with the responsibility of a public community college. The authors further state,

> Absence of research of this kind is a major omission on the part of colleges. It leaves a college with no real insights into its operation, no appreciation of the heterogeneity of its students, no understanding of its impact upon the workforce, and no valid basis for assessing its style of operation. A blind repetition of established practices - in admission policy, in instructional methodology, or curriculum organization - based upon untested assumptions carried from the past will neither enhance the quality of instruction nor justify its continued existence before government or public. (Dennison & Gallagher, 1986, p. 265)

In fact, most college administrators, in contrast to the suggestions made by Peters and Waterman (1982) regarding the qualities of excellent organizations, have little information on what is really going on in their institutions from the perspective of the student. They are not "close to their clients". Indeed, the senior managers of most, if not all, colleges have no idea what their dropout rate is because this group tends to subscribe to the "passive" philosophy of education; all that is required of them is to provide the necessary inputs of facilities, faculty, and programs and some students will succeed while others will not. Panos and Astin (1968) found such climates characterized institutions with higher dropout rates. Furthermore, most administrators assume that the principal factors promoting student failure/dropout are associated with the student, not the institution. The student simply "did not have what it takes" to be successful. This study has demonstrated, however, that this is not the case and suggests that the success or failure of students depends upon the nature of their college experiences. Students who fail/dropout in one type of environment could succeed/persist in another.

What is required is the implementation of a planning and management or decision support system of the type described by Sheehan (1982). Such a system was utilized in this study and demonstrates the means for improving both retention and institutional effectiveness. What is involved is the creation of a computer managed data base with information on student background, entry-level, interaction, and outcome characteristics, as well as course grades. This information might be termed a Student-Oriented Decision Support System and may be utilized to introduce necessary feed forward and feedback

elements into the higher education system. Specific details of these procedures are provided in Dietsche, 1990. The implementation of this decision support system could provide college administrators with valuable information which they presently do not possess: information on what is actually happening to freshmen within their institution. The utilization of this information in planning and decision-making activities could provide the means for reducing attrition, bolstering financial resources, and improving the quality of education for Ontario college students.

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Innovation and Entrepreneurship in Colleges: An Interpretive Study of the Piloting of Innovation Centres

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Abstract

The implications of college involvement in innovation and entrepreneurship through centres which promote such directions have as yet received little consideration. This interpretive study examines the sociocultural context of Ontario Colleges at the macro, medial, and micro levels of the organization. Findings describe government fiscal policy, profitability motives, bureaucratic organizational norms, incrementalism, and political and power relationships impeding successful integration of innovation centres into colleges. Such factors have precluded consideration of several significant philosophical issues. Privatization of college education, the research, community service and teaching roles of colleges, and the socialization role which colleges might play in inculcating values and skills associated with innovation and entrepreneurship have yet to be examined. Clearly, if colleges are to achieve purposeful direction-setting for the future, all involved with this system must engage in interactive leadership to decide upon values, motives and educational philosophy related to innovation and entrepreneurship.

Résumé

Jusqu'à présent le rôle que jouent les universités sur l'innovation et l'esprit d'entreprise au moyen des centres crées à cet effet n'a guère été analysé. Cette étude examine le contexte sociocultural qui caractérise les collèges postsecondaires ontariens à l'échelle macroéconomique, médiane et locale de leur organisation. Les résultats font apparaître les principaux aspects de la politique fiscale du gouvernement (recherche des profits, normes en matière d'organisation administrative, gradualisme) tout en soulignant le type de relation qu'il est souhaitable de voir s'instaurer entre pouvoir et politique pour que ces

centres d'innovation s'intègrent avec succès dans les collèges. Cette analyse a permis de dissiper diverses ambiguïtés d'ordre philosophique. Il semble que la privatisation de l'enseignement supérieur, la recherche, les services à la communauté, le rôle éducatif des universités et enfin les échanges sociaux que la vie collégiale permet pourraient donner la chance aux universités de jouer un rôle déterminant dans la transmission des valeurs et des compétences indispensables à l'aquisition d'un esprit d'innovation ou d'entreprise mais ceci reste cependant à étudier. De toute évidence, si l'on veut que les universités soient les promoteurs efficaces de l'avenir, il faut que ceux qui ouvrent dans ce domaine se réunissent pou débattre des valeurs et du type de pédagogie susceptibles de rendre possible l'enseignement de l'esprit d'entreprise et d'innovation ainsi que des raisons de mettre en ouvre.

As instruments of public policy, the Colleges of Applied Arts and Technology of Ontario in recent years have been called upon to use innovation to realize their technological and economic potential as educational institutions. Contract research, consulting, patenting, joint ventures, personnel exchanges, incubation of start-up companies, business advice to students and faculty wishing to commercialize products and processes, brokerage between post-secondary entrepreneurs and the private sector, marketing of the educational institution's resources to assist industry in product development, and technical services to industries all exemplify such innovation. Such activities entail entrepreneurship, for colleges undertaking this type of innovation assume control and some risk in generating land or materiel, labour, and/or capital from the private sector to underwrite operational costs. To date, these, new thrusts have been pursued through new organizational units called "centres" for technology transfer, innovation, and entrepreneurship.

The Colleges of Applied Arts and Technology housed twelve innovation centres at the outset of this research. A variety of government, private sector and college budgets funded these centres. As a three-year experimental project begun in 1985, the future of these centres came under review by government during the period of this research. In early December, 1988, the Ontario government discontinued support for the innovation centres. Centres for entrepreneurship, implemented in 1987, have become the newest focus.

But the implications of such innovation and entrepreneurship for the college system have not received open consideration. Provincial government literature had described innovation centres as "providing an important infrastructural support in encouraging the creation of new employment, developing new products for domestic and international markets, and improving the technological capability of Ontario industry" (Ministry of Industry, Trade, and Technology, 1985).

From the educator's perspective, new educational norms, values, and goals related to ingenuity, creativity, adaptability, risk-taking, and community service might emerge from this new focus. Faculty development and institutional prestige could prove to be valuable fringe benefits. On the other hand, educational institutions which have undertaken

innovation through appended or decentralized units in the past have experienced isolation or termination of innovators (Dunbar et al., 1982, p. 106; Levine, 1980, p. 4), conflict (Ashby, 1974, p. 92; Nakamura, 1981, pp. 113-133; Weatherley & Lipsky, 1977, pp. 171-197), and impeded organizational change (Dunbar et al., 1982, pp. 91-108; Levine, 1980, p. 4). Such centres could also become a drain on educational resources, compete inappropriately with the private sector, hinder college progress toward other educational priorities, and create a negative image of the college in its community.

As educational leaders and decision-makers have little information on such potential outcomes, this research was undertaken to describe the sociocultural context of innovation and entrepreneurship in the Colleges of Applied Arts and Technology of Ontario. Specifically, the compatibility of such innovation and entrepreneurship with traditional educational endeavours was studied, as was the profitability of such innovative and entrepreneurial endeavours to college education. An understanding of such implications of innovation and entrepreneurship could enhance future direction-setting decisions related to the mandate of this educational system.

Methodology

The framework for interpreting the sociocultural context of innovation and entrepreneurship in the Colleges of Applied Arts and Technology combined three theoretical perspectives. These included conceptual models related to organizational innovation through appended units (Levine, 1980, p. 11) and organizational purpose formulation (Hodgkinson, 1978, pp. 41-44) and theory on levels of analysis of organizational culture (Dobbert, 1982, p. 56; Hage, 1980, p. 12). The conceptual framework guided analysis and interpretation of the subjective, valuational aspects motivating and shaping the pursuit of innovation and entrepreneurship, or of alternative goals and directions, in the colleges studied. Additionally, the framework focused attention on the interaction patterns, or network-building effort centred on creating, adopting, and sustaining implementation of innovation and entrepreneurship.

The study included three purposefully selected colleges. One college, with an institutional saga suggesting a reputation of success in innovation, was studied in depth. Two colleges with differing size, complexity, demographics, and geographical regions furnished data to determine any comparability or transferability of findings to other Colleges of Applied Arts and Technology. Medial (or organizational level) analysis at each of these institutions included extensive document and minute review to delineate group value-motivational behaviour and interaction patterns related to both innovation centres and the colleges as organizational entities. At the college studied in depth, over forty hours of participatory observation of board, administrative, academic council, faculty, and program advisory meetings also provided data for this medial analysis.

A total of eighty-seven confidential interviews, each approximately one hour in length, comprised the micro-analysis, or study of individuals, within these three organizations.

The purposive sampling approach sought out individuals representative of a wide cross-section of academic divisions and all levels of academic administrative staff as well as faculty. In total, eight college and innovation centre board members, thirty-three administrators representing all four levels of academic administration and the innovation centre, and thirty-nine faculty from twenty-seven different programs provided interview data at the primary college studied. Seven administrators acted as key informants at the other two colleges studied.

The purposive sample also encompassed chain sampling strategies. When interviewees spoke of specific college employees known to them as having been involved in any type of innovative or entrepreneurial projects, these employees were subsequently sought out as interviewees who were most likely to be knowledgeable about any activities related to innovation and entrepreneurship at the college.

Extensive document review, a limited amount of participatory observation, and six interviews with key government elites furnished data for the macro-analysis, or interpretation of the college system's sociocultural environment. The latter encompassed both federal and provincial governments and representatives of the external college community.

A semi-structured interview schedule contained twenty-four questions. Developed from the conceptual framework, questions one through eleven sought an understanding of the individual's perceptions of his or her own value-motivational behaviour within the college context. Questions twelve through twenty-two assessed the individual's level of involvement with the innovation centre, to provide an indication of specific value-motivational behaviour related to the centre. Hall and Louck's typology of levels of use of an innovation (Sorg, 1983, pp. 391-406) provided the theoretical basis for these questions. Question twenty-three sought the interviewee's perceptions about the power and political relationships associated with the college's operation of its innovation centre. Finally, question twenty-four ensured refinement of understanding in the mutual construction of reality through summarization and clarification of the interviewee's perceptions (Appendix A).

Results

Many contractual factors have contributed to the challenge of implementing innovation and entrepreneurship through innovation centres in Ontario colleges. At the macro or extra-organizational level, federal and provincial government policy directions have fostered innovation and entrepreneurship in response to social, political, and economic forces. Simultaneously, however, the provincial government has impeded college innovation and entrepreneurship by restricting regulations, ignoring privatization issues, and leaving college leaders to sort out conflicting social values at the local level.

At the medial or group level, within the colleges themselves innovative and entrepreneurial pursuits existed prior to the piloting of the innovation centres. Such efforts continued despite fiscal constraints, hierarchical, bureaucratic decision-making, uncoor-

dinated, fragmented operations, and conflicting values. Ultimately, however, innovative and entrepreneurial efforts suffered severe compromise.

At the micro level, individuals within the colleges contributed to this phenomenon through pursuit of diverse goals, without due consideration of various directions. Furthermore, although individuals recognized the many impediments to organizational pursuit of commonly shared purposes, most expected those in positions of power to determine and achieve direction for them. The following sections describe this enactment of innovation and entrepreneurship.

Government Incentives

Government values and motives in the evolution of this direction toward innovation and entrepreneurship have not been particularly subtle. The 1988 federal policy on entrepreneurship (Industry, Science, and Technology Canada, 1988, p. 3) clearly stated government intent to mobilize entrepreneurship for the economic, social, and cultural development of Canada through partnerships with the academic community. Policy actions included entrepreneurship studies, skills training, and access to science and technology for entrepreneurs wishing to develop and commercialize innovations.

Likewise, as early as 1984, the Ontario government stated a desire to promote the ability to invent, to create, and to be entrepreneurial, and stressed that it universities and colleges ... must be full partners in the economic and social transformation of the province (Grossman, 1984, p. 1). A 1986 budget statement reinforced this direction, citing the priority of cooperation with post-secondary schools "that demonstrate effectiveness in basic research and success in securing commercial contracts in applied research" (Shore, 1986, p. 8). Most recently, the report of the Premier's Council on Technology (Volume 1, 1988, p. 233), which directs a one billion dollar technology fund to encourage science and technology research in both private sector and post-secondary institutions, has indicated this Council's intention to study related education and training initiatives.

But government fiscal policy has played an even greater, although more subtle, role in promoting college involvement in innovation and entrepreneurship. Until 1985, the federal government had purchased training provided by colleges through the provincial governments. But in 1985, the federal government's Canadian Job Strategies Program introduced two major fiscal policy changes: decreased federal funding for vocational training; and purchase of a portion of the training through funding the private sector to meet its own training needs. These changes have become increasingly significant, for the 1986-87 Canada-Ontario Agreement on Training specified an annual increase in this new purchase approach. The direction has forced colleges to be entrepreneurial, for now these institutions have to compete with private sector training agencies for funds to deliver training programs.

The provincial government's creation of a new Ministry of Skills Development in 1986 to administer funds and decisions for federal training purchases still directed through

the provincial government has exacerbated this push toward college entrepreneurship. This new ministry has secured training from many sources other than the colleges. Thus, this too has forced colleges to compete with the private sector for provincial funding from a ministry not accountable for them. The change has had a major impact on colleges, for approximately 33% of college funding now comes through the Ministry of Skills Development, rather than from the Ministry of Colleges and Universities.

In 1988, the federal government froze its apprenticeship budget for Ontario at the 1987 figure of $37 million, despite growing demand for training. Colleges faced even more pressure to compensate for underfunding through entrepreneurship. Provincial government funding approaches have not offset this pressure. Increased funding for innovation has been largely directed toward universities and Ryerson Polytechnic Institute through the University Research Incentive Fund, the University Excellence Fund, and funding of university-based technology transfer centres.

Access to Ontario's three-year Innovation Centre Program funding begun in 1985 therefore merely constituted the first direct government incentive for innovation and entrepreneurship by colleges. Although this program was terminated in 1988, its successors, centres for entrepreneurship, funded by a combination of government and private sector moneys, have continued government encouragement of similar college activity. Such government policy implemented through the power of both Progressive Conservative and Liberal parties, appears to send a very clear message motivating college innovation and entrepreneurship.

Government Impediments

Despite such incentives, government impediments to innovation and entrepreneurship by colleges also have existed. First, the Ontario Council of Regents, responsible for providing policy advice on college education to the Minister of Colleges and Universities, had absolutely no involvement in decisions to establish centres for innovation and entrepreneurship in colleges. In fact, even the Ministry of Colleges and Universities only became involved after innovation centres had been established in 12 colleges and 10 universities with funding and contractual arrangements by the provincial government's Ministry of Industry, Trade, and Technology. As a consequence, the Ministry of Industry, Trade, and Technology determined the initial policy direction - to use the wealth of research activity and resources available in Ontario's post-secondary institutions to create new employment, develop new products and markets, and to improve the technological capability of Ontario industry. From the start, the appropriateness of this direction for publicly funded colleges went unexamined.

Once the Ministry of Colleges and Universities did become involved, mixed messages impeded college evolution of a role in innovation and entrepreneurship. While the Ministry of Colleges and Universities created a Department of Commercial Services in its College Affairs Branch in 1987, sending a message of support for innovation and entrepreneurship, this ministry also has conveyed many messages of non-support.

For example, in reaction to private sector concerns about competition from publicly funded college innovation centres in the business marketplace, the Ministry of Colleges and Universities blocked college revenue generation through incorporation of innovation centres. As colleges were obliged contractually to match government funds for operating innovation centres, in cash or in kind, this action constituted a serious constraint. Furthermore, other college entrepreneurial initiatives, including testimonial advertising and fund-raising, met with reactive Ministry of Colleges and Universities policy initially banning, and later restricting, such activities.

Secondly, no initiative to create leadership in addressing the sensitive, value-laden issues related to private sector funding and involvement in college education has as yet materialized in the government structures responsible for the college system. The Ontario Council of Regents' new mission statement emphasizes this group's intention to provide leadership in the process of defining, rather than in the ultimate defining of the purpose of college education. Despite repeated pleas in college-prepared annual reports for government direction about college mandate, the Ministry of Colleges and Universities has also opted out of active determination of college mandate with regard to innovation and entrepreneurship. Representatives of this department indicated that while direction toward innovation and entrepreneurship comes from the Cabinet, throne speeches, and the Premier's Council on Technology, goals have been left open, so that colleges are free to evolve, and move around, and develop their own goals. Only time and the possibility that colleges might exercise self-determination will determine whether such potentially inflammatory issues as the trend toward privatization of college education will receive open consideration through government-initiated policy processes.

Confronted with an opportunity to participate in policy evolution on such issues, college administrators and educators have other environmental circumstances to consider. Current socio-demographic factors, including a declining immediate post-secondary applicant pool and skilled labour force, motivate a reexamination of traditional college goals and directions. National and provincial economic factors and increasing international competition exert pressure for more integration of educational with social and economic policy evolution. Cries for increased accountability of colleges as instruments of public policy reinforce this direction. Mass media repeatedly support the notion that innovation and entrepreneurship have arrived as Canadian social ideals.

Simultaneously, at the grassroots level, however, these same educational leaders grapple with advice put forward by college governors and program advisors representing their local communities. These groups still attend largely to more traditional academic goals and processes. Indeed, those studied in this research displayed no interest in college involvement in innovation through applied research and technology transfer. Furthermore, very limited interest in education for entrepreneurship appeared. Primarily, interest in entrepreneurship stemmed from recognition of the need for dollar profits to ensure program or institutional survival in an era of government-imposed economic constraint. Thus, even individual reflection of the extra-organizational environment of colleges with regard to

innovation and entrepreneurship portrayed motives and values largely premised on dollar profit. Few considered the potential compatibility or incompatibility amongst norms, values, and goals of innovation centres and those related traditionally to college education.

The Intra-Organizational Context of Colleges

Collective activity within the colleges studied reflected similarly limited concern about the compatibility of innovation and entrepreneurship with traditional college education. Prior to acquisition of innovation centres, two of the three colleges studied had proactive units pursuing similar innovation, including research and development of computer software, interactive video, and telecommunication materials for educational delivery. Through annual reports, the decision-makers of one of these two institutions openly declared that such innovative efforts were intended to make the college less dependent upon government grants. Entrepreneurship was no secret.

Such activity would suggest that innovation and entrepreneurship as proposed for innovation centres would not be incompatible with organizational norms, values, and goals. In fact, incompatibility did not appear to be all issue. Where such innovative and entrepreneurial activity occurred, these pursuits transpired despite official college statements largely endorsing traditional training goals.

More amazingly, innovation occurred despite day-to-day preoccupation with process-related goals emphasizing efficiency and productivity rather than any academic, innovative, or entrepreneurial directions. In reality, the impediments experienced by all three colleges studied forced each organization to concentrate on negotiating and delivering training programs and on managing physical, fiscal, and human resources. Inadequate government funding, government approaches to funding, government-dictated operating policies, and the absence of government and college educational philosophy, policy, and leadership contributed significantly to this organizational orientation. Fiscal policy decided direction.

Furthermore, the bureaucratic structure and functioning of colleges as a sub-set of a bureaucratic government prohibited refinement of organizational purposes. Formal hierarchy, formal communication channels, authority relations, rules and regulations, and centralised formal decision-making meant that the power wielded emanated from those in positions of authority. These key decision-makers determined the values and motives associated with innovation centres.

In the instance of the most entrepreneurial college, key decision-makers acquired an innovation centre to achieve monetary profit for the college. Non-fulfilment of that motive understandably became the reason for the centre's termination. In the other two colleges, key decision-makers determined community service to be of general profitability to the organization's image. Fulfilment of this motive contributed to greater hesitancy on the part of key decision makers in each of these two institutions to terminate the innovation centres, despite the Ministry of Industry, Trade, and Technology's decision to do so. Ultimately, however, the position power of this ministry effected the termination of

these two innovation centres as well. These colleges simply could not afford to continue their centres without government funding and support. Centralized authority therefore determined college direction.

Bureaucratic structure and functioning also ensured a segmentalist (Baldridge & Burnham, 1975, pp. 169-170; Kanter, 1983, p. 20) approach between and among various groups constituting these organizations. Poorly executed communication and collaboration linkages ensured that innovative efforts most often went unlinked with opportunities for meaningful exploitation of them. Energy therefore remained unfocused, for such operational norms precluded reflection on valuational, philosophical, and mission-related issues. Mutual understanding of purpose (Vaill, 1984, pp. 88-89) and mutual adaptation toward a purpose (Berman & McLaughlin, 1976, p. 360) did not transpire. In the absence of mutually shared purposes, priority-setting frequently emerged reactively from political and power relationships enacted in competition for scarce resources. Decisions implemented therefore reflected incremental changes in what already was, or had been, rather than any breakaway innovation, even as this might have related to academic endeavours.

To complicate matters further, at the one college studied in depth, groups consistently struggled with the simultaneous valuing of autonomy and collaboration. The diversity of professionals comprising the educational institution contributed to a loosely coupled organizational existence in which individual autonomy was valued. Nevertheless, a felt need to achieve some semblance of collegiality clearly existed. Efforts to satisfy each of these opposing values only frustrated group pursuit and fulfilment of the other. As a result, all groups became further caught up in attending to processes to promote autonomy or collegiality. Such activity prevented attention to purpose, mission, or even short-term objectives, be these related to traditional academic pursuits or to innovation and entrepreneurship.

Organized work effort thus did not reflect Hodgkinson's (1978, p. 40) organizational purpose formulation. Rather, the state of organization existing in the college studied in depth more closely approximated Greenfield's (1984, pp. 164-165) anti-leadership phenomenon. The social order was pluralistic, and the position designated leaders determined, rather than represented, the values of the group. While key individuals at the other two colleges studied made an effort to predetermine and act on values, and consequently minimized organizational conflict, lack of similar effort at the ministry level thwarted innovation centre continuation at these institutions. Innovative, entrepreneurial, and, indeed, traditional academic pursuits evolved through incrementalism and the power relationships enacted, not by purposive action premised upon any vision of the future.

Individual Enactment of College Activities

Value-motivational behaviour at the micro or individual level of the organization also shaped this intra-organizational context of innovation and entrepreneurship. Consistent with previous research findings (Konrad & McNeal, 1984, pp. 31-40; Piccinin & Joly, 1978; Quinn, 1972), individuals held a great diversity of goals. Many identified traditional academic goals. These included: providing education for employment and life

skills; promoting educational accessibility and mobility for students; and occasionally, providing a service to the community. Less frequently, individuals reflected the valuing of innovation as part of academic goals, primarily in conjunction with the development of new curricula and instructional delivery modes.

Very few cited goals related to innovation through research and development. Goals related to entrepreneurship appeared somewhat more frequently, but these goals related to promoting student recruitment and retention, enrolment growth, and revenue generation for the individual's program, division, school, and college. Profit to the institution and, both directly and indirectly, to one's self, provided the incentive. Individuals pursued linkages and partnerships with business, improved college marketing, and college survival, and often spoke only of personal profit motives.

Individuals spoke as frequently of personal goals related to organizational operation. People at all levels of the college studied in depth spoke of desire and effort to improve communication, effect collegiality, promote human resource development, and contribute to the development of a college mission, goals, and strategic plan. Good will certainly prevailed amongst individuals, even though collective action did not reflect successful achievement of the apparently desired outcomes.

Most cited the nature of the organization, its operation, and the work opportunities afforded as ample incentive for their commitment to these goals. Only a few individuals cited innovation-related incentives, including the opportunity to be involved in innovation, research and development projects, and the college's progressiveness. Likewise, a few individuals also referred to entrepreneurial incentives, voicing appreciation of the opportunity for college employees to pursue their own businesses, consultant work, or other private entrepreneurial endeavours. None portrayed altruistic opposition to the existence of incentives and goals related to innovation and entrepreneurship in the colleges studied. A limited few did allude to the potential detrimental effects such directions could have on the pursuit of educational values and goals.

Impediments observed at the organizational and group level affected individuals similarly. Individuals frequently spoke of inadequate resources, particularly fiscal resources, and several related concern about organizational focus on budget rather than on teaching students.

However, much greater concern emanated from perceptions about poor administrative and organizational structures, and poor communication impeding goal pursuit. Individuals bemoaned limited strategic planning, absence of a clear college mission, role, and mandate, lack of educational leadership, centralized decision-making and control, a "pigeonholing structure", lack of linkages between committees, polarized and competing factions, and incongruence between stated and enacted philosophy. Several explained how lack of clarity in the organization's role, a conservative, rigid, and inflexible bureaucratic approach, and mixed messages about profit motives and the acceptability of revenue generation all combined to create confusion and skepticism about the college's innovation centre. In fact, 24% of the faculty interviewed at the primary college studied had never

heard of this institution's innovation centre. An additional 70% of interviewed faculty, 55% of interviewed administrators, and 63% of interviewed governors reported that they knew of the centre's existence, but did not know anything more about it. Several readily admitted that they also had not attempted to acquire such information. Indeed, a few individuals engaged in innovative and entrepreneurial projects expressed distrust of using such a centre's assistance. They feared sabotage of both their own ideas and potential economic gains by such organizational structures.

Given such impediments and the diversity of individual goals, work effort, not surprisingly, also tended to be very individualistic. Individuals described work effort characteristic of traditional instructional delivery in a post-secondary milieu. Additionally, considerable effort focused on operational processes, particularly to effect improved communication and linkages within the college and its external environment. Work effort of an innovative nature reflected traditional academic undertakings such as innovation in curriculum delivery and design much more than it approximated the business-related research and development work undertaken by individuals in innovation centres. Fully one-third of individuals interviewed, however, indicated that they were also working on their own private business, consulting, or other outside contract work. Although this work effort clearly had not been harnessed for organizational purposes, such entrepreneurial endeavours closely approximated the work effort associated with innovation centres.

Thus, the context of innovation and entrepreneurship enacted at the micro-level of the organization also could not be characterized as reflecting any clear incompatibility of norms, values, and goals. Rather, individuals who held key intra-organizational positions, particularly college presidents, determined the goals, values, and motives associated with college pursuit of innovation and entrepreneurship. Furthermore, the work effort of these key individuals also determined whether other individuals within their colleges and their respective innovation centres developed any semblance of mutual understanding and adaptation toward organizational involvement in innovation and entrepreneurship.

The vast majority of individuals within the college studied in-depth adopted a reactive stance to all organizational directions, including that of innovation and entrepreneurship. A "live and let live" philosophy prevailed. Most individuals communicated an expectation that those in positions of power should provide them with organizational information, a mission, a plan, and direction for its pursuit.

Discussion

The context of innovation and entrepreneurship in the Colleges of Applied Arts and Technology as created by research participants in this study may be characterized as serendipitous and non-directional. No individual, group, or organization associated with the governments responsible for public education and only a select few individuals within the colleges studied even indirectly considered the appropriateness, purpose, and potential outcomes of college involvement in innovation and entrepreneurship through innovation

centres. In fact, only one of the three colleges studied had begun to evolve the purpose and future direction of the educational role of the institution in a strategic plan. At all levels of the organization, including the macro or extra-organizational level, individuals and groups just busily pursued daily operational processes, be these related to innovation, entrepreneurship, or academic program delivery. Compatibility of norms, values, and goals associated with innovation and entrepreneurship and with college academic pursuits therefore has not been of concern.

The Extra-Organizational Context

As the issue of innovation and entrepreneurship within the colleges as publicly funded institutions of higher education has only recently surfaced, there has been little time to grapple with the complexities of related policy inquiry. Government has to date left this task to higher education itself. The extra-organizational context contains three critical points for decision-makers within post-secondary educational institutions.

First, money frequently dictates action. Impediments and incentives often are monetary in nature. Thus, circumstances foster dollar profit motives in association with college enactment of innovation and entrepreneurship. Value-motivational issues related to privatization of education therefore ultimately come into play, whether or not such issues are openly addressed.

Secondly, the enactment of the political process inevitably shapes value motivational behaviour beyond any simply conceived or articulated norms, values, and goals, however well intended. Government *responds* to the society it represents (Millett, 1974, p. 143). Sheer numbers prevent government's effecting the one to one interaction, or participatory democracy, necessary to detail a vision from shared collective insights. Forthright detailing of a vision by key decision makers takes on the appearance of paternalism at best, and dictatorship, at worst. Furthermore, Canadians have not been perceived to possess the futuristic vision and risk-taking attributes (Kerwin, 1989, p. A7; White, 1988, p. xxi) necessary for innovation and entrepreneurship. Whether this perception represents fact or socially constructed myth, agents of government who proactively pursue uncertain futuristic vision run the risk of perceived radicalism.

Such phenomena force a reactive mode amongst government agents. Both the politics of staying in power and the power of being political combine to upstage the visionary component necessary for innovation and entrepreneurship. Education and its delivery as a public service has not escaped this fate. Consequently, the extra-organizational context of innovation and entrepreneurship cannot be either readily or rationally confirmed at any one time or place.

This circumstance creates both the opportunity and the responsibility for the conscious exercise of value judgments by decision-makers at all levels of the policy-making chain. But from the elected representative down through the hierarchy of government's ministries and, subsequently, through the hierarchy of those who are ultimately government

employees within colleges, all must weigh the consequences of boat-rocking innovation. For the majority, very real and human basic needs for security shape action. Thus, politics determine plans, and plans represent reactive linear incrementalism (Braybrooke & Lindblom, 1963), not the futuristic vision associated with innovation, and entrepreneurship.

Thirdly, no clear mandate has been articulated for the colleges. Much of the direction-setting is subject to influence power. The power of influence rests with its recipient. Thus, educators have a tremendous amount of reciprocal power to wield, should they so choose, in determining future direction related to innovation and entrepreneurship in the CAATS.

The Intra-Organizational Context

But the intra-organizational context of the college system also presents many challenges inhibiting innovation and entrepreneurship. The fragmented, bureaucratic nature of colleges leaves key decision-makers, and indeed, all educators, isolated, each forced to tackle such issues from his own perspective, or quietly to ignore them.

The comfort of quiet has most frequently prevailed. From the perspective of the vast majority of educators in the educational institutions studied, no clear incompatibility of norms, values, and goals existed between innovation centre operation and the more traditional academic undertakings of colleges. However, in the one college studied in depth, only a minority of college employees had any real grasp of the mandate of such centres. Where such understanding existed, the loosely coupled nature of post-secondary institutions (Weick, 1983, pp. 15-37), goal diversity, and conflict avoidance behaviours precluded awareness of value motivational incompatibilities. Organizational mission and purpose with regard to innovation and entrepreneurship simply has not received consideration.

While silence on this issue has undoubtedly protected institutional peace, silence has also prevented active decision-making related to maximizing invaluable human resource potential. Given that maximizing human resource potential constitutes the primary business of education, this matter warrants serious consideration.

The valuing of privatization clearly emerges in current government socioeconomic policy, including the quasi-policy associated with innovation and entrepreneurship in higher education. But the legitimacy of intentional privatization in colleges has yet to be determined. Many recognize colleges as institutions serving those who could not be accommodated either financially or academically by universities. These individuals oppose the privatization direction, which they believe increases the discrepancy between educational services provided to the rich and those provided to the poor. Others applaud privatization as increasing the freedom of choice of individuals in pursuing higher education. In their view, such freedom of choice promotes excellence, accountability, and diversification of educational services. The value conflict related to these two perspectives will eventually surface, regardless of the direction taken in relation to innovation and entrepreneurship in the colleges.

Many related value-laden policy questions also have yet to be answered. Do the values associated with innovation, entrepreneurship, and privatization reflect those of Canadians? Do colleges as instruments of public policy have a role to play in inculcating such values in learners, thereby contributing to Canadian acculturation? Indeed, for what purposes, means or ends, does the government and, ultimately, the populace of Ontario, value colleges?

The picture may be interpreted more readily from what was *not* found amongst the data of this research. Only two of three innovation centre directors and eight educators of the 87 individuals interviewed alluded to the value of exposing the student populace of colleges to opportunities for innovation and entrepreneurship. These individuals believed such learning experiences would foster creativity, initiative, and critical thinking and problem-solving skills, and ultimately, the ability to earn a living through one's own unique abilities, independent of existing employment structures. The vast majority reflected a pattern of value-motivational behaviour locked into traditional teaching and learning activities and outcomes conforming to currently existing employment opportunities and expectations. While these individuals espoused the valuing of innovation and entrepreneurship, they related this valuing to their own personal endeavours and self-profitability, or to an organizational service to business, industry, and the community's few innovators and entrepreneurs who require assistance to achieve success.

Conclusion

Educational leaders associated with the college system have not actively considered the educational implications of innovation and entrepreneurship through endeavours such as innovation centres. New learners, new approaches to educational delivery, new involvement in expanded scholarly roles for faculty, new educational goals related to the cultivation of life-long learning in society, and a renewed regard from their contribution to enhancing the nation's human potential could await colleges. Alternatively, pursuit of innovation and entrepreneurship might lead to yet more competition for increasingly scarce resources, decline of academic standards, misdirection of the human resource potential of educators, and perhaps even the decline of society resulting from the inculcation of avarice through educational processes.

This picture conveys greater meaning when placed in its broader context. Society currently experiences unprecedented change, which stems not least of all from a transition to a global economy. Several leading theorists have emphasized the imperative of innovation in recent publications (Drucker, 1985, p. 177; Gallagher, 1987, p. 9; Kanter, 1983, p. 354). In an age when innovation, technology, and knowledge are the basis of wealth, Canada lags far behind (Premier's Council on Technology, 1988, p. 20). For a decade, Canada has made about half the effort of its competitors in research and development (Kerwin, March 3, 1989, p. A7).

The time has come for educational leaders to consider the educational system's services and products with regard to innovation and entrepreneurship. Society expects publicly funded education to contribute positively to social change through economic and technological development, and both to reflect and to perpetuate its culture (Dale, 1982, pp. 127-147). Educators have a key role to play, not only in providing technological and scientific knowledge and training, but also in shaping society's values and skills related to innovation and entrepreneurship.

To date, action premised upon good intentions, focused on daily operational processes, and unaccompanied by reflection about values, a vision, and mutual adaptation toward its pursuit has thwarted innovation and entrepreneurship. If innovation and entrepreneurship are to be successfully pursued in the Colleges of Applied Arts and Technology, then structural-functional impediments associated with bureaucracy and with organizational politics must be addressed. Most importantly, however, an interactive leadership process with conscious attention to valuational issues and mutual understanding of and adaptation to a common purpose must transpire. Such leadership can only happen if and when educational practitioners, policy-makers, decision makers, and all others involved at all levels of the college system and the government responsible for it exercise their opportunity and responsibility for self-determination. Leadership of this nature requires that all become engaged in more thought prior to action.

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Appendix A

Guideline for Interview of Individuals within College A

1. What goals are you pursuing for _____College at the current time?
2. What goals do you think you will be pursuing on behalf of _____ College in the next 5 to 10 years?
   (If there is no clear indication of purely educational goals, ask specifically what these are and might be.)
3. What incentives motivate you toward the achievement of these goals?
4. What are your employment-related aspirations?
5. What impediments have stood in the way of achieving the goals you have been pursuing on behalf of the college to date? (Explore personal, social, organizational, cultural, physical, economic, technical, time, and space impediments.)
6. What impediments do you anticipate may exist in the future?
7. What organizational structures have you used, if any, to make a systematic effort to achieve the goals you have identified?
8. What specific tasks, if any, have you undertaken to make a systematic effort to achieve these goals?
9. What specific technology, if any, have you adopted to make a systematic effort to achieve these goals?
10. What norms and values guide your work effort? (Use prods, with examples observed, as necessary. If necessary, focus in on education-related norms and values.)
11. Do innovation and entrepreneurship tie into your work-related goals now? In the future? If so, how?
12. Have you heard anything about the college's Innovation Centre? What have you heard?
13. (If not, or if minimal knowledge), have you taken any action to gain more information about the college's Innovation Centre?
14. What role, if any, did you play in its inception? For what purpose? How frequently? Over how long a period? (Ask when, if appropriate, so that minutes can be researched if not already uncovered.)
15. What do you think the goals of the Innovation Centre are? What should they be?

Arrangements for Coordination Between University and College Sectors in Canadian Provinces *

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Abstract

This paper reports the results of a study of provincial level arrangements for coordination of planning and operations between university and college sectors in Canada. The data are drawn from a survey of senior government and sector officials in which respondents were asked to describe existing arrangements for coordination and to comment upon the importance attached to, and priority issues for, coordination; characteristics of effective structures for coordination; and their satisfaction with existing arrangements. The findings indicate that inter-sector coordination is perceived as an important issue; that coordination structures are most developed in the provinces in which there is the strongest mandate for articulation between sectors; and that efforts are under way in most provinces to refine and improve structures for inter-sector coordination.

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Résumé

Cet article présente les résultats d'une étude sur les modes de coordination à l'échelle provinciale, de la planification et du fonctionnement intersectoriels des universités et des collèges au Canada. Les informations utilisées pour les fins de cette analyse ont été obtenues à partir d'une enquête effectuée auprès des hauts fonctionnaires des gouvernements provinciaux et auprès des institutions d'enseignement postsecondaire. L'objet de cette enquête a porté sur les modes de coordination en place, sur l'évaluation de l'importance attribuée à ces activités, sur les questions prioritaires nécessitant la coordination, sur les caractéristiques des structures de coordination qui s'avèrent les plus efficaces, et enfin sur le niveau de satisfaction en regard des structures existantes. Les résultats de l'enquête indiquent qu'on attache généralement une grande importance aux structures de coordination intersectorielles; que les provinces possédant les structures les plus développées sont celles ayant établi un mandat clair de coordination; et enfin, que toutes les provinces sont déjà engagées dans un processus qui vise à développer et à améliorer les structures existantes.

Canadian higher education is often described as having at least two distinct sectors – the universities and community colleges. The operations of each sector may impinge on the other sector(s) in a variety of ways, for example, with respect to competition for funds, joint programs, transferability of credit, and overlapping markets for adult and continuing education. Given the interdependence of the sectors, a number of questions emerge concerning the structures and processes which are or could be employed to ensure that the planning and development of each sector takes account of the implications for the other sector(s): Is there a need for inter-sector coordination? What arrangements for coordination between university and college sectors currently exist? How satisfactory are the existing arrangements? What are the characteristics of effective coordinating structures?

In this paper we will address these basic questions by discussing the findings of a recent survey of key actors. We will begin by describing the various contextual factors which formed the basis for our interest in this topic, followed by a description of the survey method, and a summary and analysis of our findings. It is not our objective to provide comprehensive, definitive answers to the questions noted above. Rather, given the absence of any existing study or data on intersectoral coordination, our goal is to provide a modest contribution to what we suspect will be an ongoing policy debate by bringing to attention the importance of the topic, describing the structures and arrangements for system level coordination which presently exist, and reporting the perceptions of a sample of relevant provincial government and sectoral officials on the related issues.

Context

Postsecondary education systems in nearly all jurisdictions are comprised of a variety of institutional types, including universities, community colleges, technical institutes, adult education centres, and other tertiary level institutions. Often, public institutions of

the same type are grouped together and operate in certain respects as, and/or are treated by public authorities, as a system. For example, in the binary structures which are common in North America, the university sectors and the community college sectors each typically exhibit some features of *intra-sector coordination:* i.e., they fall under the jurisdiction of a sectoral planning or coordinating agency, there is some rationalization of funding among the institutions within each sector, and there is some coordination of capital expansion, admissions, approval of new programs, and financial and operational reporting.

Given the potential for overlap of objectives and activities between different types of postsecondary institutions and the complementarities between sectors, a question arises as to whether there is a need for *coordination between sectors.* On *a priori* grounds, it might be supposed that the need for such coordination would vary among jurisdictions, depending upon the particular role and mandate ascribed to the respective sectors in different jurisdictions. For example, one would expect the need for inter-sector coordination to be greater where community colleges offer the first two years of university programs than where the role of colleges is restricted to terminal occupational training. Even in the latter case, however, there may be a public interest in inter-sector coordination: for example, in regard to the rationalization of non-credit adult education courses; interface with employers in seeking placements for work experience components of cooperative education programs; siting and control of expensive capital equipment; decisions as to which sector should have responsibility for programs in emerging and/or marginal occupations for which the training may be in the university or non-university sector (such as nursing, secretarial science, industrial accounting, and some of the medical technologies); and funding levels of the respective sectors - which may determine which sector can best accommodate students who are on the margin insofar as their preference for or acceptability to one or the other sector is concerned (on the choice process for such students, see Anisef, 1986; Stokes, 1988).

Arrangements for handling inter-sector coordination in regard to the above noted and other issues range from comprehensive, formal state level structures on the one hand, to institutional level, ad hoc initiatives, on the other. An example of the limiting case at the former end of the continuum would seem to be the Australian approach which involves a national agency with jurisdiction over all postsecondary institutions and an intent to treat universities, colleges of advanced education, and institutes of technology as elements of a unified national system (Smith, 1990, p. 8). In North America, arrangements for inter-sector coordination have been described in published literature only for the United States, and even there, only a quite limited amount of published literature is available. While some states have consolidated higher education supervisory agencies with jurisdiction over all public postsecondary education, the dominant theme in the literature has to do with the lack of effective coordination between sectors, and concern over leaving the responsibility for coordination to the vagaries of autonomous action on the part of individual institutions within the framework of decentralized structures (Meinert, 1977; Kissler, 1982). Some approaches which have been tried in the United States to achieve better coordination,

particularly with respect to enhancing articulation,[1] include the establishment by institutions of Offices of Articulation, and the formation of voluntary Articulation Consortia involving representatives of all institutions in a given locale (Shafer, 1974). Meinert reports, however, that many educators believe that really effective coordination can be achieved only by state agencies which have jurisdiction over all postsecondary institutions.

Canadian higher education is characterized by the existence in all provinces of at least two distinct sectors, universities and community colleges; and, additionally in most provinces, of other more specialized institutions, such as open learning institutes, or those specializing in law enforcement, music, fine arts, transportation, marine science, medical technology, or other branches of technology, which may or may not be administered as part of a provincial university or college system (Dennison & Gallagher, 1986; Skolnik, 1986). Further, the role and mandate of the non-university institutions vary among provinces, with some having an explicit university transfer or university preparation role (British Columbia, Alberta, and Quebec - and as is developing in Saskatchewan, Nova Scotia & Newfoundland), and others having no such formally mandated role (Ontario, Manitoba, New Brunswick). These differences would suggest that the perceived needs for, and extant priority given to, inter-sector coordination may well vary substantially among provinces.

Because of differences on the part of the two sectors in their respective histories and relationships to government, coordination between universities and non-university institutions did not develop as a natural outgrowth of the evolution of the two sectors. In the majority of provinces, community college systems were established only after almost all the universities in those provinces were already in existence; and in such a situation,the specific issues which might give rise to a perceived need for coordination would emerge, if at all, only after a considerable time. Further, the non-university sectors tended (albeit to varying degrees) to be directed by a provincial ministry, while universities enjoyed considerable autonomy. For this reason (and probably other reasons as well), no provincial government has superimposed a single coordination mechanism or agency over the two sectors. Thus, the most likely way for a coordination structure to come into existence would have been through the voluntary initiative of representatives of each sector, and such would be likely to occur only after a sufficient period of time for leaders in each sector to become aware that there might be a problem in need of attention. An exception to this generalization is the case of Quebec, where at the time of establishment of the CEGEPs their mandate was such that it was probably clear to all concerned that substantial coordination with the universities would be necessary if they were to fulfil their mission. The same realization likely developed, though perhaps in less sudden or dramatic fashion, in British Columbia and Alberta, commensurate with the point noted above about the different roles of the nonuniversity sectors in these provinces.

Methodology

The comments above are intended to indicate briefly the basis for our *curiosity* regarding both current arrangements for inter-sector coordination in Canada, and the opinions of key actors as to the need for such coordination. Regarding the latter, we should note that the research which we will describe here is somewhat unusual in that part of the research activity itself consists of determining whether the subject of the research is of sufficient perceived significance as to warrant the effort. In particular, we wanted to avoid colouring our research by starting from an initial position with respect to the importance of achieving coordination between the university and college sectors: i.e., we did not want to presume that some formal structures and processes for coordination were essential, and then assess our data from that perspective. On the other hand, we could not take the fact that there has not been a single published study in Canada on this subject - though we unearthed administrative documents pertaining to the issue in some provinces - as indicating that it does not warrant investigation. There are no doubt issues of significance to Canadian higher education which have not yet been the subject of much study.

Our research involved a survey of key actors and an analysis of relevant documents, most of which were provided by our survey respondents. Identified as key actors were the Deputy Ministers responsible for universities and/or colleges in each province and territory, the heads of all provincial postsecondary intermediary bodies and the various provincial associations of universities or colleges, and the heads of the few corresponding interprovincial bodies, such as the Maritime Provinces Higher Education Commission. Because our focus was on *provincial level* arrangements for coordination, rather than bilateral arrangements at the institutional level, we did not include university or college CEO's or others whose primary attachment is at the institutional level, though the views of such persons as to the importance of provincial level coordination could certainly influence the effectiveness of any arrangements for coordination.[2] Similarly, because of our focus on provincial arrangements - and because of provincial jurisdiction over postsecondary education - we did not include national agencies in our survey.

In an effort to get at the major questions about coordination presented in the introductory section of this paper, our questionnaire[3] included items on: respondents' perceptions of the need for coordination; issues and policy areas for which coordination might be warranted; description of existing arrangements; and opinions on the adequacy of those arrangements, improvements which respondents would like to see, and factors which should be taken into consideration in developing or modifying arrangements for coordination. The questionnaire and an explanatory letter, which summarized the objectives of the project, were distributed by mail in February, 1990. Those who did not respond to the initial mailing were telephoned in April in an attempt to encourage their participation.

We received responses from 18 of the 28 agencies surveyed (64%), covering all but one province. Response rates by region were: Western Provinces (the grouping in which we included also the territories), 70%; Ontario, 80%; Quebec, 50%; and Atlantic Provinces,

57%. In addition, we received one unsolicited response from a provincial association of universities which was not listed in our source directories but which heard about the survey, giving us a total of 19 responses. Responses were received between February and June of 1990, and our data on existing structures should therefore be viewed as a 'snapshot' of arrangements which were in place during that time.

Although a response rate of nearly 67% is normally cause for satisfaction in surveys of this type, the failure to obtain the remaining responses must be considered at least a modest limitation of the study. Yet after examining the pattern of responses and non-responses, we have reason to believe that the findings are broadly representative of the population sampled. There was only one province for which no response was received; and one other where only one of two respondents surveyed responded. In cases where more than one response was received from a province, the responses tended to be quite consistent with one another; and there were some very clear patterns across provincial (and sectoral) boundaries with respect to several items: for example, with regard to the issues for which coordination was needed and what were thought to be the characteristics of an effective coordination structure. Also, of course, it should be noted that the study did not deal only with perception; a major focus was on describing the existing arrangements and structures, and in most cases the responses in this regard were augmented with publicly available documentation.

In the commentary which follows, we are constrained by our undertaking not to report information which could identify individual respondents. The principal effect of this constraint is to limit our capacity to identify provinces which had only one or two responses in regard to opinion items, though we can refer to general tendencies among regional or other groupings of provinces, or among categories of respondents. A further limitation of the study is that, as its goal was to provide a broadly comprehensive snapshot of existing arrangements for coordination across the country, it does not provide the depth of analysis of any particular provincial arrangements that might be obtained through an intensive case study of those arrangements.

The Need for Inter-Sector Coordination

Respondents were asked to rate the importance of developing or improving mechanisms and processes for coordination between university and college sectors, in relation to other issues facing higher education, on a four point scale, as: one of the most important issues to address in postsecondary education; of middling importance; one of the least important issues; or not an important issue at all. Seven rated it as one of the most important issues, nine of middling importance; one placed it between middling and least important; one said least important; and one did not respond to this item. That almost all rated coordination within the first two categories, and almost half rated it as among the most important issues, suggests that our effort to investigate this subject was warranted.

Among respondent categories, a slight majority of senior government officials rated this issue as most important, while a slight majority of sector respondents rated it of middling importance. This difference may be due to the fact that the government officials have responsibility for both sectors, whereas the sector respondents internalize responsibility for only their own sector and are more preoccupied with other issues pertinent to that sector, as, for example, funding.[4] This difference among respondent categories might also imply that sector officials may come under some pressure from governments to do more to coordinate certain of their activities.

Almost three-fourths of the respondents from the provinces with the most highly articulated relationship between colleges and universities (British Columbia, Alberta, and Quebec) rated coordination as a most important issue, while only about one-fourth of respondents from the other provinces as a group did so, indicating a strong relationship between perceived importance of this issue and the mandate of the non-university sectors among the provinces. As to the policy areas which give rise to the need for coordination, almost all respondents, including those from provinces where transfer of students from colleges to universities is not an official element of the colleges' mandate, identified transfer as one of the principal concerns warranting efforts at provincial coordination. Three-fourths of respondents also identified system planning or funding, including rationalization of resources and facilities and avoidance of duplication, as additional motivating factors. In addition, a few respondents identified improved provision of opportunities for adult education and distance education, professional development of academic staff, and monitoring of student outcomes as other needs to be addressed through inter-sector coordination.

Several respondents related the need for increased efforts toward provincial coordination to the increasing complexity of provincial higher education systems. For example, one respondent suggested that ... in this country, ... we are moving ... towards a development of what will be, in effect, a *single* postsecondary system operating on a continuum" [emphasis added]; and another stated that :

> I anticipate a system which is much more complex than the "two-sector" model you [the authors, in our covering letter] describe .... Over the next decade I am sure we will see the emergence of colleges which grant degrees, and "universities" which have varying definitions of involvement in research and graduate studies. As demand is projected to significantly exceed resources we shall probably find new partnerships and collaborations emerging. All of this means, of course, that the coordination and articulation of the system will inevitably become more complex.

Existing Structures for Coordination

The formal structures currently in place for inter-sector coordination at the time of the survey are depicted in Table 1. It will be noted that a single government ministry or department has the major supervisory responsibility for both universities and colleges in each

Table I

Structures for College-University Coordination in Canada as of Spring 1990

Structures	BC	Ab	Sask	Man	Ont	Que	NB	NS	PEI	Nfl
Regional Level										
Intermediary Body							X	X	X	
System Level										
Single Government Department for both sectors	X	X	X	X	X	X	X	X	X	X
Internal Government Committee				X						
Constituent Committee-Policy/Planning	X	X	X			X				
Constituent Committee-Admission/Transfer	X	X				X		X		
Sector Level										
University Sector Committee on Coordination					X	X				
College Sector Committee on Coordination					X	X				
Institutional Level										
Interinstitutional Arrangements/ Agreements	X	X	X	X	X	X	X	X	X	X

province. While this has not always been the case, and while additional ministries may have responsibilities for certain activities of colleges and universities, the fact that a common ministry oversees both sectors in each province has significant implications for inter-sector coordination. It suggests, for example, that a single Minister and, one would expect, a number of senior officials review and discuss policy matters for both sectors. It is reasonable to assume that this arrangement provides a greater potential for inter-sector coordination - if such is desired - than a situation in which each sector is under a different ministry.

While the single ministry structure for both sectors offers the potential for coordination, the extent to which substantive coordination is actually effected at the ministry level varies from province to province. Only one formal ministry level coordinating committee was identified, the Postsecondary Issues Committee in Manitoba, which consists of the Deputy Minister of Education and Training, the Executive Director of the Planning and Research Branch, the Assistant Deputy Minister of the Postsecondary Adult and Continuing Education Division, and the Executive Director of the Universities Grants Commission.

Perhaps not surprisingly, then, most respondents felt that *if* there is to be meaningful coordination, formal structures for it must involve others besides or in addition to ministry officials. Such formal structures are of two types: one focussing upon broad issues of system planning and development, and attempting to identify and facilitate cooperation in regard to any issues which cut across sector boundaries; and the other which concentrates upon matters related to articulation. Both types of committees or agencies are found in British Columbia, Alberta, and Quebec; and in addition, the first type exists in Saskatchewan and the second in Nova Scotia.[3] Typically, the first type of committee includes representatives of both the ministry and institutions. For example, the Joint Policy/Planning Advisory Committee in British Columbia (JPAC) brings senior representatives of all postsecondary sectors together with ministry officials and provides advice on system-wide policy and planning issues. A larger and more formalized body, the University/College Liaison Committee in Quebec (CLESAC), includes representatives of the ministry, seven universities, three CEGEPS, one private college, the Council of Rectors and Principals of the universities, and the Federation of CEGEPS. Its responsibilities include: ensuring coordination between the two sectors in respect to the objectives of each sector, seeing to the complementarity between sectors and avoiding unnecessary duplication, and facilitating "harmonious passage" of college students to university. While the CLESAC's responsibilities overlap the fourth and fifth rows in Table 1, Quebec has two subsidiary committees which have specific responsibilities for coordination of articulation between the CEGEPs and universities. One (CPRSA) deals with the programmatic aspects of articulation and has representatives from all universities and CEGEPS; while the other, BEC, deals with the management of student records.

A well established example of an articulation committee of the type referred to in row 5 of Table 1 is the Alberta Council on Admissions and Transfer. The Council is an independent body reporting to the Minister of Advanced Education and is "responsible for developing policies, guidelines, and procedures designed to facilitate transfer arrangements

among postsecondary institutions" (Alberta, 1989, p. 1). The Council plays an active role in the implementation of transfer policies through monitoring, mediation, and research, including the annual publication of all existing admissions policies and transfer arrangements in Alberta postsecondary education. Its membership includes representatives from the public, universities, public colleges and technical institutions, provincially administered institutions, hospital schools of nursing, and private colleges.

In March, 1989, the B. C. Minister of Advanced Education and Training announced the creation of the B. C. Council on Admissions and Transfer, with similar responsibilities to those of the Alberta Council. However, in keeping with recent developments in British Columbia which involve the development of cooperative arrangements between the universities and colleges to increase accessibility to degree programs in the interior of the province, the B. C. Council appears to have a broad responsibility for stimulating cooperative ventures and system coordination. The B. C. Council's statement of purpose is:

> To provide leadership in achieving an overall goal of maximizing advanced education opportunities for students through inter-institution transfer, cooperative ventures, differentiated roles and mission requirements and other arrangements which lead to the various postsecondary institutions working together *as a system* [emphasis added].

The membership of the B. C. Council includes two students (one college, one university), three college/institute administrators, one administrator from each university and the Open Learning Agency, and one school superintendent.

In addition to the bodies indicated in rows 4 and 5 of Table 1, several provinces have more specialized bodies, some permanent and some ad hoc, which deal with particular aspects of college/university relations. These include provincial associations of registrars that have membership from all postsecondary institutions in the province; task forces or committees on adult/continuing education, distance education, and facilities utilization; and committees comprised of staff from different sectors and concerned with particular program areas for which the different sectors are each engaged in related training and professional development activities.

In contrast to the provinces which have committees indicated in rows 4 and 5, which involve representatives of all sectors, the only formal committees in Ontario which have responsibility for considering issues which cut across sectors are intra-sector committees. Both the Council of Ontario Universities and the Committee of Presidents of the Colleges of Applied Arts and Technology have recently established committees on college/university relations, though it is not clear yet whether these are intended to be permanent.

Recent interest in college/university relations in Ontario appears to have been spawned initially by a conference in October, 1988 in which the Ministry of Colleges and Universities invited representatives of the two sectors to come together to discuss issues of mutual interest, especially articulation; and subsequently, by the undertaking in 1989

by the Council of Regents for the CAATs of a major review of the mandate of the colleges, entitled Vision 2000. Historically, the CAATs were established as an alternative to the universities, with their emphasis being on occupational training and retraining, adult education, and community service. Systemic linkages between colleges and universities were eschewed - though there was provision for bilateral agreements[6] between individual colleges and universities for the provision of university credit courses in the CAATS. In their first two decades, the colleges developed quite independently of the universities (see Jones, 1991).

In recent years, there has been increased concern about several issues which cut across the college-university boundary: inconsistency of treatment by universities of those students who do go on from various colleges to university; the limited opportunity for college graduates in some fields to achieve full professional certification or recognition without a university degree; the increased activity of American universities in the province seeking to address this demand; and alleged gaps in the present postsecondary structure in regard to polytechnic education. These issues have been examined in the course of the Vision 2000 review of the CAATS, a participatory process which involved a number of representatives from the university sector.[7] The Study Team which examined these issues considered two approaches to dealing with them. One was "the formation of a provincial institute without walls which would provide degrees for combined college-university studies" (Ontario,1990, p. 6). The other model considered was " a coordinating body that would facilitate arrangements which increased transferability between colleges and universities."

In its final report, Vision 2000 recommended the establishment of a "provincial institute without walls for advanced training" which would have among its objectives to: "facilitate the development and coordination of arrangements between colleges and universities for combined college-university studies"; and "offer combined college-university degree programs, with instruction based at and provided by colleges and universities" (Vision 2000, Final Report, p. 99). This institute would incorporate some of the functions of coordination structures in other provinces, e.g., providing leadership in the development of college-university links and publishing annually a calendar which describes program coordination arrangements between provincial colleges and universities. In having also the capacity to award degrees for combinations of courses taken in universities and colleges, the recommended institute - which in this respect is modeled on the U.K.'s Council on National Academic Awards would have powers extending well beyond those of the coordinating structures in other provinces. The report suggests that these augmented powers might enable the institute to stimulate the development of innovative, cooperative college-university programs generally, through providing a model for such innovations, for example in regard to prior learning assessment; and it might also address needs for joint college-university programming that are not addressed by the colleges and universities. In October, 1991, the Minister of Colleges and Universities announced that, among the Government's responses to Vision 2000, will be the establishment of a task force to "undertake a feasibility study into innovative ways for colleges and universities

to cooperate in offering new credentials for advanced training", including the examination of the institute without walls proposed in the Vision 2000 Report (Allen, 1991).

Finally, in regard to structures for inter-sector coordination, the last row of Table I shows that in all provinces there are arrangements at the institutional level, generally involving bilateral consultation and often formal agreements between individual colleges and universities. As the focus of our study is on provincial level coordination, we have not examined institutional arrangements in any depth. Also, a number of respondents have indicated that however valuable the institutional arrangements are, they cannot achieve the same ends that can be attained through provincial level coordination.

Satisfaction With Existing Arrangements

In general, respondents from British Columbia, Alberta, and Quebec were satisfied with the existing coordination arrangements, though some indicated that much remains to be done regarding overall system development, and that maintaining the commitment of universities is an ongoing struggle. Most of the respondents from other provinces felt that there is a need for more formalized coordination structures than those which currently exist. In Nova Scotia and Saskatchewan, active efforts are underway to develop structures appropriate to recent changes in the non-university sector, and there seems to be a feeling of excitement and optimism about the imminent responses to the challenge of coordination. In the remaining provinces, the subject of coordination is under review, at least in some quarters, but the likelihood and direction of development is not yet clear.

Several respondents commented that satisfaction with the existing arrangements may differ by sector. It was suggested that colleges are generally in favour of relatively high levels of inter-sector coordination, while universities generally prefer voluntary, bilateral arrangements between institutions (though it should be emphasized that this observation is drawn from a limited number of responses). From the university perspective, the move towards formal inter-sector coordination may be viewed as a reduction of, or infringement on, university autonomy. There may also be concerns regarding the potential for cross-sector homogenization, or the 'upward drift' of some institutions in an attempt to obtain higher status. Further research at an institutional level might indicate the extent and strength of differences in perceptions about inter-sector coordination between sectors, and illuminate the various factors or beliefs which underscore such differences.

Characteristics of Effective Coordination Structures

Regarding characteristics of effective coordination structures, most respondents felt that the major responsibility for coordination must rest with representatives of universities and colleges and that institutional members of coordination committees must assume ownership of the problem. Several stated that an effective coordination body would not include government officials at all; but others opted for broadly based committees consisting of

institutional representatives, government officials, and individuals representing other interest groups, such as employers of graduates. Other factors which were identified as enhancing effectiveness were: clarity of the coordinating agency's mandate; stature-derived, for example, from legislation or empowerment by the appropriate Minister; having the 'right' people; and respecting the roles of the various provincial institutions. Several respondents suggested that clarity of institutional mandates is necessary to facilitate the effectiveness of any coordination structure.

It was generally accepted that the coordination process involves a tension between public accountability and institutional autonomy. There are no solutions to reconciling this tension, though some suggested that having a third party to mediate, and in some circumstances arbitrate, between the two sectors could be useful. In fact, one of the stipulated responsibilities of the Alberta Council on Admissions and Transfer is to mediate between institutions. Though some respondents identified elitism or resistance on the part of universities as a major barrier to coordination, most respondents felt that maintaining institutional autonomy, particularly for the universities - the extent of autonomy of the non-university institutions varies a great deal among the provinces - was essential. Indeed, a respondent from British Columbia felt that one of the factors which had contributed to the success of coordination arrangements in that province was that they had protected the autonomy of provincial universities, and had thus enabled the tapping of institutional initiative and creativity.

Summary and Conclusions

This study has addressed a subject which there is reason to believe may be of growing importance in Canada, but about which there had been no prior efforts to collect even rudimentary data in a comparative provincial perspective. To fill that gap, the authors undertook a survey of key policy actors in each province, eliciting from them information on present arrangements and structures for achieving coordination between university and other postsecondary sectors; the respondents' perceptions of the need for such arrangements; their satisfaction with existing structures, and what they believed to be the most important characteristics of effective structures for coordination. For purposes of this study, key actors were defined as Deputy Ministers responsible for universities and/or other postsecondary sectors in each province, heads of provincial intermediary bodies for university and other sectors, and heads of provincial and interprovincial associations of universities and other postsecondary institutions.

Our analysis suggests that college/university coordination is generally considered by key actors to be a matter of considerable importance particularly – but not only, in regard to working out arrangements for students who wish to proceed from community colleges or other non-university institutions to universities. A considerable majority of respondents indicated that coordination was important also in regard to system planning, funding, and rationalization of resources and facilities.

We found that approaches to coordination vary across the country, with policy/planning committees under the aegis of a provincial ministry and articulation committees comprised of broad representation from all sectors being the most predominant structural forms. As might be expected, approaches to coordination are most developed and formalized in those provinces in which the postsecondary education systems have had mandated articulation between sectors for quite some time; i.e., Alberta, British Columbia, and Quebec. In general, respondents from these provinces were satisfied with the existing arrangements. In other provinces, particularly Nova Scotia, Ontario, and Saskatchewan, college/university relations appear to be a subject of increased attention recently - in most cases pursuant to a desire to facilitate greater movement of students between sectors and/or develop inter-sectoral programming. In those provinces, efforts are under way to develop provincial vehicles for effecting greater coordination — at the policy level, if not at the operational level as well.

Considering that some provinces are now searching for approaches to intersector coordination, while key actors in others report satisfaction with their arrangements for coordination, it would be tempting to conclude that structures like the JPAC in British Columbia, the CLESAC in Quebec, or the Alberta Council on Admissions and Transfer could pro vide effective models for those provinces which wish to develop new structures for coordination. Such a conclusion is, however, premature for two reasons. First, such a conclusion would require a more in-depth analysis of the effectiveness of these structures than it was the purpose of this study to undertake. Second, the coordination structure which is most appropriate for any province depends upon the particular policy objectives desired. As the policy objectives related to inter-sector coordination differ considerably between say, British Columbia and Quebec, so too do the instruments used to achieve coordination, i.e., the JPAC and the CLESAC. Thus, in examining coordination structures in other provinces, it is important to take into consideration possible differences in provincial policy goals. These qualifications notwithstanding, those provinces which are presently searching for more effective structures for inter-sector coordination could do worse than to begin by studying the arrangements which exist in the provinces which have been at this endeavour the longest.

Notes

[1] Articulation has been characterized as "a process, an attitude, and a goal" (Meinert,1977:491). As a process, it involves the coordination of policies and practices among sectors of the educational system to produce a smooth flow of students from one sector to another. As an attitude, it means that educators in all sectors are willing to transcend institutional self-interest and work together to achieve the maximum developmental benefits for the student. As a goal, it envisions the elimination of artificial barriers, so that the totality of a jurisdiction's educational resources "becomes one unbroken flow, which varies in speed for each individual".

[2] Of course, some of the heads of provincial associations of universities or colleges are also CEOs of institutions.

[3] The questionnaire is available from the authors upon request.

[4] The qualifier in our questionnaire, " in comparison with other issues currently facing postsecondary education in your province", appeared to influence some respondents to choose "middling: rather than "most important." For example, one respondent noted that he gave "great weight" to that phrase. He stated that "the need for improved processes for policy coordination between the university and college sectors is great indeed;" but that in the context of that qualifier, he would have to rate it as of middling importance.

[5] The Nova Scotia community college system is in the developmental stage. The committee referred to consists of one representative of the Nova Scotia Council on Higher Education, an intermediary body for university affairs, and one from the Department of Advanced Education and Job Training, on behalf of the community college system. The committee, which liaises with both the universities and community colleges, will be advising on, among other things, arrangements for coordination. Though it has a broad mandate to advise on the development of the college system, it appears to be particularly interested in articulation.

[6] The relatively small number of bilateral agreements which have been developed are described in one of the background studies prepared for Vision 2000 (Marshall, 1989).

[7] The background studies for Vision 2000 dealing with these issues are by Stokes, Dennison, Skoinik, Smith, and McFadyen, all 1989 publications.

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